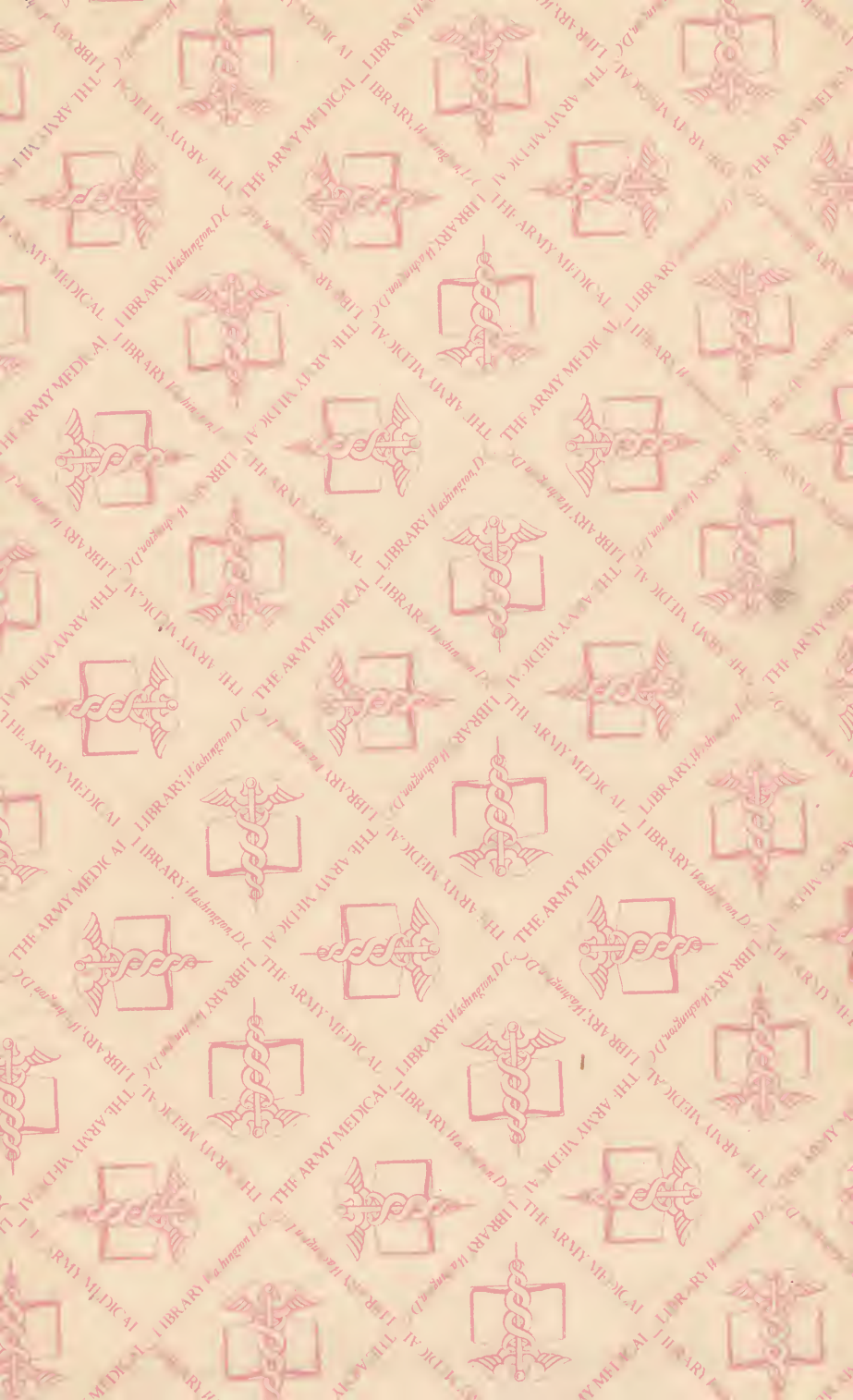


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A
FEW REMARKS
ON THE
USE AND ABUSE OF EXERCISE,
WITH THE
CONSEQUENCES OF BOTH.



A
FEW REMARKS
UPON
THE USE AND ABUSE
OF THE
GYMNASTIC AND HYGEINIC EXERCISES,
WITH
THEIR POWERFUL AGENCY IN THE DEVELOPMENT
AND FORMATION OF
A GOOD FIGURE BOTH IN MAN & WOMAN,
AS WELL AS
IN THE PREVENTION
OF
SPINAL & CHEST DEFORMITIES;

AND MORE PARTICULARLY
AS THE ONLY MEANS OF EFFECTUALLY REMOVING THEM
WITHOUT INJURY, & EVEN WITH IMPROVEMENT
TO THE CONSTITUTION OF THE PATIENT.

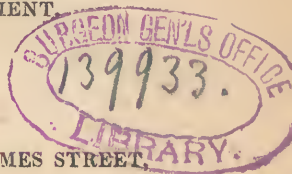
BY
✓
PROFESSOR HAMON.

DIRECTOR OF THE ROYAL GYMNASIUM, 8, JAMES STREET,
HAYMARKET,
AND OF THE ESTABLISHMENT FOR THE PREVENTION AND
CURE OF

SPINAL AND CHEST DEFORMITIES,
33, JERMYN STREET.

TO BE HAD OF THE AUTHOR, AT EITHER OF THE ABOVE PLACES.

1844.



WE
H229f
1844

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LONDON:

PRINTED BY C. ARMAND, 46, RATHBONE PLACE, OXFORD STREET.

IN respectfully dedicating the following work to the Ladies, Noblemen, and Gentlemen, who, in the course of the last twenty years, have placed themselves or their children under my care, whether as Pupils or Patients, I cannot forego the opportunity of offering my sincere thanks for the favorable manner in which they have uniformly received whatever I felt it my duty to propose, and their regular and undeviating practice of the minutiae of a system, that has, in consequence, been productive of the most beneficial results, and of which themselves, the indisputable records, they have so often been pleased to express their unqualified approbation, and to extend to myself the most flattering and liberal patronage. Permit me, then, thus publicly to acknowledge the grateful pride with which

I have the honor to subscribe myself,

Their most obedient Servant,

THE AUTHOR.

TO THE READER.

IF an author begin with, what is vulgarly called, a trueism, the superficial reader will most probably ask. "Why has he thought it necessary to tell us that, which every body knows?" Forgetting that without axioms, previously stated, we could never arrive at conclusions bearing the stamp of truth. If they be not indeed facts which are advanced, or, if so, the statement of them be erroneous, the deductions must be false to the existent state of things. The author of the present work has taken so much pains to ascertain the correctness of the matter he has collected, and been so scrupulously accurate in the detail of it, that whatever he may lay before the public, will, he trusts, be found as consonant with fact and experience, as he hopes it will be with reason and common sense.

Dr. Riadore, in his Treatise on Irritation of the Spinal Nerves, says:—"That spinal marrow, and the roots of its nerves, like the brain, are enclosed in a strong bony case, showing the omniscient Creator regarded their protection from injury, together with their ganglions, to be of the utmost importance to the welfare of the being." And

again, " Some anatomists have considered that the twenty-four bones and joints forming the spinal column and the canal for enclosing the *medulla spinalis* and its membranes, is too strongly fixed together to be dislocated, or to receive impression from external or physical agents ;" but experience has amply proved the fallacy of this opinion ; for the whole are liable to the same accidents, and diseases, as the brain, and all the bones and joints of the frame." He would have been much nearer to the truth, had he said that, from its peculiar construction, it is much more frequently the seat of organic disease than that of the brain, and from its length and position, still more obnoxious to injury from external causes, independent of the accidents common to both ; of which the endless variety of educational deformities constitute the greater proportion ; whose co-existence, if they be not checked in time, ceases not, so long as the body itself lasts. More distressing, perhaps, from their baneful influence upon the character of the tedious and painful years of after-life, even than dislocation ; where the suffering is, in general, shortly terminated by death.

Much learned controversy, paper and time has been uselessly wasted upon the causes of manufactoral and educational deformities of the spine, so

common particularly in the female, and most of all in those of the higher circles. Sir Astley Cooper is reported to have said,* that for one gentleman, who came to him with spinal deformity, five hundred females consulted him upon the same subject; and his practice was at least amongst the monied orders. And still more uselessly thrown away upon its relative prevalency at various periods, from industrious or manufacturing occupations, or in the different classes of civilised society. As it is obvious, that no medicine can restore the distorted vertebræ to their proper places, however trivial the distortion may be, and that nature unassisted will not do so, would not the controvertists have been more profitably employed in seeking to find out some remedy, for an evil, so prevalent and so long and constantly before their eyes? But it is a melancholy fact, calculated to excite our astonishment as well as our regret, that not one of them, with so much talent, has discovered or pointed out any practical system of prevention, or laid down a single rational or physical principle, from which even the expectation of a cure could be deduced. The author cares not, whether they be upon the increase or

* Surleffe's Medical and Surgical cases.

decrease, to what they owe their origin, or in what class they most predominate, but he is perfectly sure that they never ought to have existed, and never would have existed, but for the misapplication of means, ignorance and neglect of those entrusted with the care of young people,* either in the domestic circle, or in the seminaries over which they may have presided, and that they are to be removed with

* This doubtlessly may have arisen from the the subject never having arrested their attention, or that from the source whence the information ought to have emanated, a due sense of its importance had never been sufficiently impressed upon their minds. "I did not know this! How could I be aware of that? I did not know that I was so culpable!" are the exclamations which constantly follow the observations the author has frequently felt himself obliged to make, and yet it is remarkable that when they must have seen so many instances of the effect, that they should not have enquired in the proper quarter about the cause. It is surely the duty of parents, who consider no pains or trouble thrown away to ascertain the merit of the masters they select to teach the very accomplishments, in acquiring which those deformities obtain, if they be ignorant to seek somewhere for competent instruction, or if, from whatever cause, they do not personally attend to the exigencies of their young family, to exert, at least an equal discretion in the choice of intelligent and careful delegates to superintend the bodily welfare and health of their children, upon which so much of their joyous spirits, their innocent delight, the happy scenery of the nursery, and the impressions of the school room almost exclusively depend; he might indeed add the effective execution of the accomplishments themselves in after life, and, certainly not of less moment, the crescent qualities of their temper and disposition. Whoever, therefore, may have been able to attain the instruction of the author has endeavoured to collect and publish, will in future be responsible not more for any deficiency they appear so much to dread, in the ornamental attainments, than for defect of form in those under their immediate care.

out difficulty. He would not have hazarded such strong assertions, were he not in a position to prove to the meanest capacity, that they are unfortunately but too well founded, by shewing that a very little attention, properly directed, would, beyond all doubt, have prevented them, and that by assisting nature, without acting in opposition to her known laws, the removal of them is certain. For this purpose the following pages have been written, and that they may be the more generally understood, he has endeavoured, as far as the subject will permit, to avoid the use of technical or scientific terms, and to put his facts and observations into the plainest language without presuming to address any part of them to the Profession, not because he fears its criticism, though he hopes they may attract its notice, because he feels that the spinal column, to which Dr. Riadore has attached a much greater degree of importance than it had hitherto been supposed to possess, by tracing to its nervous influence so many of our every day diseases, deserves much deeper consideration than for the want of leisure or from disinclination they have thought worth while to bestow.

Many unacquainted with the principles of the author's practice, may really believe, and others, from interested motives, may be induced to *insi-*

nuate, that instruments, described, some of them as fixtures, and part of the remainder as too bulky to be carried about, cannot be used without danger, particularly by a person in a weak condition; so far is this from being true, that he challenges any one of the hundreds, who have been placed under his care, their numerous friends, or Professional attendants, to bring forward a *single* instance in which injury or accident has occurred, even of the most trifling nature. For the patients, who have been restored by the application of them to their own cases, must be perfectly aware that not one of them was ever employed to bind or coerce the body, but applied to the hands and feet only; that by calling the extremities into action, they might, through their agency, have the desired effect upon the muscles of the trunk; so carefully indeed have they been contrived, and so much thought and ingenuity been bestowed upon their construction and manufacture, that less exertion is required in the use of those appropriated to the first stages of the treatment, than for the voluntary exercise of the limbs; and yet they are capable of creating any degree of excitement requisite for the more robust.

PART THE FIRST.

REMARKS

ON THE

PHYSICAL EDUCATION OF MAN.

“What a piece of work is man! How noble
in reason! How infinite in faculties! In form
and motion how express and admirable! In
action how like an angel!”

SHAKSPERE.

It pleased the Almighty in the creation of man to add the faculty of reason to his animal construction, but he has, at the same, time made matter and form as necessary to his existence as to that of any other being possessed of life, though of incalculably more importance to him, as the residence and executive of such a faculty. To the consideration of that form, it is the intention of

the present work to call a greater degree of attention, in order to discover the best means of developing those powers of expression and motion with which it seems to be so peculiarly endowed ; of acquiring the ease and elegance in repose, observable in the best specimens ; of cultivating to their highest perfection, that vigour and adaption, as well as universallity and freedom of action, which render it so admirable ; of preserving it in the full possession of these attributes ; and of restoring it when any deviation from its due proportion may have impaired its functions. From the great mass, then of opinions, to be collected from the works of the numerous eminent Professional and Scientific men, who have written upon this interesting subject ; all of whom concur in placing exercise foremost amongst the means most conducive to the attainment of these objects ; I shall select that of Dr. G. Hamilton, given in his treatise upon the Rudiments of Physiology ; from which I quote the following passage.

“ Perhaps no ordinary circumstance has so much influence on the general health, as due attention to the state of the muscular system. We may be convinced of this in two ways ; For, 1st., we see persons, whose system no means can prevent continually running into disorder, evidently

because they persist in leading an indolent, inactive, or sedentary life, in which the exercises of the muscles is totally neglected ; and 2dly, we see others, who neglect almost all the rules considered essential for securing health except this, that they incessantly exercise their bodies, and who yet pass through life almost without a bodily ailment. Under ordinary circumstances, and with a moderately good constitution, in a country like our own we may say, that the condition above all others which can secure and preserve the inestimable blessing of health, is **VARIED** exercise. With this, our food, however plain, is sweet, our body is light, our digestion easy. Without it, the salt that gives relish to every dish is absent ; we live the prey of a thousand tormenting sensations—our diseases become intractable, our secretions morbid, and children are weakly and stunted, and the term of life is materially shortened.” And this eulogium, upon exercise, is strongly corroborated by no less an authority than Dr. H. Blair.*

There is perhaps no system of Exercise which so immediately tends to produce these desirable effects—because none is so varied

* Reflect first upon that great law of our nature, that exercise is the chief source of improvement in all our faculties. This holds both in our bodily, and in our mental powers.

and so easily tempered in its application as the Gymnastic Art; which is not, as many, perfectly ignorant of the nature of the exercises, have supposed, a succession of athletic efforts, requiring great muscular exertion, such as are offered to our attention and practised in theatres, to elicit our astonishment, and which, so far from being generally useful, have a contrary tendency; but a well considered series of simple and easy exercises, arranged and modified in accordance with the age, temperament, and physical condition of each individual; in treating upon the use and abuse of which, and their immediate and remote effects, I shall not confine myself to any regular plan, but merely state a variety of facts which have come under my own observation, and make such comments as they may suggest. Its objects are to call into action, encourage and strengthen the muscles and frame of the child; to develope the volume and energy of the muscular power in youth, to impart ease of motion and elegance of carriage, and to improve to their utmost capability, that symmetry and grace in both sexes, so peculiarly the attribute of the human figure, and so eminently lovely and attractive in the female form; to sustain and preserve both vigour and activity to a more advanced age, to re-establish in the debilitated, not

only the muscular power of the superior and inferior extremities, but also of those parts of the trunk whose province it is to assist the operation of the organs of transpiration and digestion ; and, lastly, to prevent or correct those lateral curvatures of the spine, which, arising from the most trifling causes or culpable neglect in early life, particularly in the female, too frequently entail deformity and misery upon the sufferer, and tend to shorten an existence embittered to its latest hour ; It is likewise evident that exercise is not only advantageous, but absolutely necessary in old age, to mitigate, at least, those diseases, which are the consequence of supposing it incapable of exertion, under which false impression it is suffered too often to sink into the enervating habits of a sedentary life.

To obtain these objects, the professor should not only be intimately acquainted with the structure and mechanism of the skeleton, and have a competent knowledge of the figure, power, and direction of the fibres of the different muscles, and the insertions of the tendons by which they act, but also with the manner in which the antagonist muscles resist and balance each other, with their mechanical operation upon the frame, in order, that in the formation of his system, and the adaptation of it to his various pupils, he may be able to adopt

the best possible modes of exercise, and exclude such as would overtask any particular set of muscles. He should also understand the economy of the viscera, that he may know how to place the body, when under exertion, in such positions as to preclude the possibility of rupture, even if there should be a predisposition to it; and to avoid every effort likely to produce pressure or strain upon the contents either of the Thorax or Abdomen.

Mr. Coombe, in his work upon the constitution of man in relation to external objects, seems to have been perfectly aware of the necessity of acting in conformity to the dictates of such a knowledge, when he proposed to offer his "observations in support of the proposition, that the due exercise of the osseous, muscular, and nervous systems, under the guidance of intellect and moral sentiment, and in accordance with the physical laws, contributes to human enjoyment; and that the neglect of this exercise, or an abuse of it by carrying it to excess, or conducting it in opposition to the moral, intellectual, or physical laws, is punished with pain."

He should also be able to discover and appreciate the temperaments of his pupils; for, since physiologists have not attempted to impugn the ancient doctrine of the reciprocal action of mind

and body upon each other, it must be acknowledged that the temperaments, not only sensibly affect the disposition and temper, and in great measure influence the development of the faculties of the mind, but are themselves principally dependant upon the energy and capabilities of the secretory organs of the body, and may be strongly acted upon, through their agency, either to the improvement or injury of the mental, as well as corporeal endowments of the individual; and that intellect gives that superiority to the human figure, which no education can enable the brute form to attain, because it has it not: If the economy of the brain be disturbed, what mind can retain its self possession? and what form, however perfect, could be made a fencer or a pugilist under the guidance of an idiot!

Then is the soul a nature which contains
 The power of sense within a greater power
 Which does employ and use the senses pains
 But sits and rules within her private bordre.

DAVIES.

And nature, crescent, does not grow alone
 In thews, and bulk, but, as this temple waxes,
 The inward service of the mind and soul
 Grew wide withall.

SHAKSPEARE.

Dr. Spurzheim confines the temperaments to four principal ones, though they may be subdivided or combined. The first of which, the lymphatic, he thus describes. "A thin skin, repletion of the cellular tissue, softness of the muscular system, languid vital action, with tardiness and weakness of the whole affective and intellectual powers." And I have myself had occasion to observe in persons of this temperament, who have been under my care, an almost invincible disinclination to exertion, with great dulness of apprehension, and a concomitant deficiency of memory, and I could mention, were I at liberty, several instances, in which by enforcing a judicious course of exercises, this temperament has been elevated (if I may so call it) into the second, named by the Dr., the "sanguine," with a surprising improvement of the mental faculties, accompanied by an effective memory. How much, then does it become those who are intrusted with the care of our youth, to give at least some portion of their attention to the cultivation of the body as well as to the education of the mind, particularly when that education would thus be rendered more efficacious, in as much as it has, I think, been clearly shewn how much the energy of the latter depends upon the healthy tone of the former. In corroboration of

which remark, I have the testimony of a great number of gentlemen, who have attended my gymnasium in after life, in consequence of their experience of the advantages to be obtained by the practice of these exercises even in schools where they were partially and injudiciously superintended; all of whom have declared that they invariably returned with renewed powers of attention and awakened capabilities to their scholastic studies after the hour appropriated to their gymnastic instruction; this was to have been expected, when we consider, that the brain, whose faculties are intellect (*) is animated by general exercise in common with the other organs of the body (**) but which from its peculiar situation in a bony case, incapable of either expansion or contraction, is of far more importance to it than to them; since,

(*) If one of the organs, attributed to the brain by the science of phrenology, be established upon fact; this follows of course; if not, it is at least the agent of acquirement and communication, and equally demands the animation necessary to its welfare — *The Author*.

2 “The fancies most like the index of a clock are moved but by the inward springs of the corporeal machine which even upon the most subtilized intellectual is dangerously affectual. — *Glanville, Sepsis*.

3 “The vital faculty is that by which life is preserved and the ordinary functions of the body performed, and the animal faculty is what conducts the operations of the mind. — *Quincy*.

(**) “In a living being, though never so great, the sense and effects of any one part of the body instantly make transcurſion through the whole. — *Bacon*.

from this circumstance, in order to prevent the injuries consequent upon repletion on the one hand and inanition on the other, it is necessary that an equilibrium in the action of the arteries and veins, as well as in the secretory and absorbing vessels, should be nicely adjusted, and duly kept up; not only for the welfare of the body but also from its influence upon the intellect, on the healthy state of which depends the capability of receiving instruction, or comprehending abstract ideas; and which we constantly see following any deviation from the requisite equipoise step by step from insusceptibility of excitement to the ravings of a brain fever.

The "sanguine", temperament, says the Dr., is distinguished "by a moderate plumpness of person, tolerable firmness of the flesh great activity of the blood vessels, and an animated countenance."

The third, or bilious temperament displays still greater energy, moderate fulness and firmness of flesh, harshly expressed outline of person, a strong marked and decided countenance! Persons of either of these temperaments who have attended my gymnasium have rapidly improved in strength and symmetry, and became capable of undergoing great bodily exertion without fatigue.

"The nervous, or most active temperament,

is accompanied by delicate health, emaciation of the muscles, quickness in muscular motion, and vivacity of sensations," and here the greatest care is necessary in the choice of proper exercises, to avoid such as have a tendency to produce too much excitation or irritation, and to adopt those, which, by gradually strengthening the system, may reduce its too great activity, invigorate and confirm the health, and develop the emaciated muscles, thereby subducing this, as the lymphatic may be raised to a more desirable condition.

A gymnasium conducted under the superintendence of a person possessed of such information, if contemplated without prejudice, ought to be considered by the physician as a valuable addition to the exercises generally under his command, such as riding, walking &c., (and what patient does not at some time or the other require well directed exercise.) By the surgeon, as a certain and unfailing resource in cases of unequal growth, or of spinal and other deformities, at least up to the age of twenty five years, and by both as a powerful means of invigorating debilitated muscles, equalizing the circulation of the blood, restoring a healthy tone to the glands, improving the digestion, and establishing a sound and, probably, lasting constitution, and by the public as an in-

calculable benefit, of whom, not one in a thousand lift the hand so high as the head, except to arrange the hair, or to put on a hat or cap; seldom calling into action the trunk or superior extremities, thereby leaving the principal parts of the body, particularly those upon which the health of the whole mainly depends, comparatively inactive.

From the perusal of the numerous works, published both in this country and on the continent, upon the subject of gymnastics, the practice of which, founded upon sound principles of physiology, is so eminently conducive to the hygiene of the body. I have observed that persons profoundly ignorant of the mechanism of the frame, and possessing a mere superficial knowledge of the effect of the exercises they so fearlessly introduced have unhesitatingly announced themselves professors of the art, and having strung together a collection of exercises unscientifically arranged, and recommended them indiscriminately in every case, without regard to the age, temperament, or bodily condition of their pupils; never considering that, what may be highly beneficial in reference to the organic construction of one person, may be equally injurious to that of another; I have no doubt that to the ignorance, and consequent mistakes of such pretenders is mainly to be attributed the little

success, which attended the first introduction of these exercises into this country.

The obscurity of the above publications, which are indeed little more than mere pedotribique manuals, without plan or order, have convinced me of the necessity of laying before the public, in as clear and concise a manner as possible, what appears to me to be the best method of applying (if I may be allowed the phrase) this art, and the advantages to be derived from it, more especially at it is beginning to be acknowledged as a powerful auxiliary to medical practice.

The encouragement I have experienced, and the recommandations I have received from some of the most eminent physicians of the Metropolis, and the observations which have appeared in many of the best conducted Reviews and leading papers of the day, have determined me to publish the results of more than twenty years experience as a professor of this art; and the manner in which I have adapted it to, at least, two thousand individuals, from seven to seventy years of age, of all conformations and temperaments, in every case, I trust, with benefit to the pupil, or patient, without a single instance of injury or accident.

It is not my intention to give any description of the different exercises or the various modes I have

adopted, lest the misapplication of them by persons unacquainted with the physical construction of the body, their powerful effects, or the nature of the individual case, may be productive of injury, and so prevent their more legitimate and beneficial use.

We will now consider what will most conduce to the development of the frame and organs of the child, the best means of cultivating the gradual increase of the muscular energy of the youth, and of making such use of his acquired strength, as to improve his vigor and render his form as near perfection as possible, as he advances into middle life; and what is perhaps the most important part of the subject, because it has been but little attended to and least understood, is to shew how easily and how certainly, strength and activity can be preserved to almost any age, and the declining years exempted from the ordinary infirmities of debility and dyspepsia with their miserable consequences, Gout, Gravel and Asthmatic catarrh.

It is I believe, acknowledged that there are few diseases, even when they become chronic, in which exercise prudently taken, is not highly beneficial (many indeed require no other treatment) that it is one of the most powerful agents, in the preservation of health, and that it should not be aban-

doned as our years advance, particularly such exercise as we have been accustomed to (for habit has made it indispensable) and even should our earlier avocations have precluded the use of it, till release from business may have afforded us the opportunity, yet, that if properly begun in the first instance and regularly persevered in, it will ward off many of the diseases and uncomfortable sensations attendant upon old age, which is too often permitted to make its more rapid approaches from neglect of wholesome and appropriate exertion.

It has been doubted whether the gymnastic exercises, (most erroneously termed violent) do not tend to shorten life. Perhaps when abused, carried to too great an extent, or continued without diminution through the different stages of life, like the abuse of every other good thing, they may have that effect; but as the experience of thousands has proved, that, when scientifically adapted to the growing energies or gradual decay of the body, they conduce to the general health, and that when prosecuted under proper direction, they are even to the latest period of existence the best means of preventing those diseases which weaken the frame and undermine the constitution, it is evident, that on the contrary, their tendency is rather to prolong life, certainly to alleviate the infirmities of age.

Cabanis says (1) "Dans tous les siècles les observateurs ont reconnus la grande utilité de l'exercice pour la conservation de la santé; en effet les mouvemens corporels, en portant à l'extérieur les forces qui pendant l'état de repos, tendent presque toujours à se contracter, soit dans le cerveau, soit dans les viscères du bas-ventre; en font une plus exacte répartition: Ils rétablissent ou maintiennent l'équilibre; ils animent la circulation, provoquent la perspiration insensible, attisent en quelque sorte le foyer de la chaleur vitale, et par le surcroît de ton qu'ils donnent aux fibres musculaires, ils empêchent la prédominance vicieuse du système sensitif."

For some time after the introduction of gymnastics into this country, the absence of every thing like order in the arrangement of the exercises, and the unscientific manner in which they then were taught, occasioned great doubt as to their beneficial agency; contributed to bring them into disrepute, and prevented their obtaining that attention, which they undoubtedly deserve; they were regarded as a dangerous innovation, and it was not till after a searching investigation by men of science, that the exercises, which I have taught, and

(1) Rapport du physique et du moral de l'homme.

the system I have introduced, compelled an acknowledgment of the great advantages resulting from the practice of them, and the important aid they afford to the department of the medical science, which is principally directed to the hygiene of the body and therapeutics.

Did any doubt remain as to the utility of this art which is calculated to render so great a service to humanity, the testimony of hundreds, from amongst the superior ranks of society, of all ages, constitutions, and temperaments, might be cited, who have participated, and still continue to participate in the advantages of my method, and the most distrustful may satisfy themselves, if not under the influence of prejudice, of the absence of all danger, and be convinced of their powerful agency in the development of the organs of man, and the establishment and maintenance of bodily health, by a visit to my gymnasium; which is frequented by persons, whose position in society and general information, enable them to form a sound judgment, and whose opinion must carry the greater weight, as being deduced not only from the beneficial effects they see produced upon so great a number of their fellow pupils, but also from their own personal experience; the variety too of the exercises afford great facilities to the professor in recti-

fyng the irregularities of the structure in youth occasioned either by accident or bad nursing, he may indeed not unfrequently be able, as it were, to regenerate the last scion of a family almost upon the brink of extinction.

If what has been advanced, be not founded in truth, nothing can be easier than to expose so dangerous a system ; such an exposure indeed would be a public benefit ; but, if, on the contrary, my theory and practice shall be found correct, I may fairly lay claim to a just and candid acknowledgment, after having devoted the greatest part of my life to the discovery and arrangement of so simple and certain a means of bestowing on a great portion of mankind, that, of which so many circumstances may have conspired to deprive them, a vigorous body and sound constitution.

To those, who would disengage themselves from besetting prejudices, and judge from the evidence of their own senses, I would point out the blacksmith and carpenter, whose vigor of body and strength of arm you so much admire, who, notwithstanding the numerous privations, under which they suffer, maintain robust health, even to advanced age. Look at the mountaineer, who, with his extreme frugality, and painful exertions, preserves in old age the strength of those parts he has

been obliged constantly to exercise, the lower extremities, the loins and the organs of respiration; see also the dancer, you would be happy to enjoy, even in a slight degree, the bodily activity he possesses at a time of life when men in general consider themselves old. This is solely because the several parts of the body have been duly continued in exercise. Let me not be understood, that to obtain these advantages, we must become blacksmiths, carpenters, or dancing masters; but I do most confidently assert, that an easy and simple application of gymnastics, properly understood, will produce similar results, by means more suitable to our social position.

To prove how far these exercises are from being accompanied by the dangers, with which designing ignoramus's have sought to alarm the timid and indifferent; I need only refer to the Royal Academy, Woolwich; the Royal Naval Asylum, Greenwich; and the Royal military Asylum, Chelsea; as well as a number of private establishments in the vicinity of London, where the gymnastic exercises have been practised for upwards of twenty years, with most beneficial effects, during which, not less than six thousand boys, from eight to fourteen years old have gone through the various evolutions, adapted to their age and strength, without a single

accident; had there indeed been the slightest appearance or chance of danger, the use of the exercises would have been immediately forbidden by the governors of these establishments, which confer so much honor upon the country by the paternal care and attention under which they are directed. The excellent effects produced by a constant and well directed use of these exercises are more particularly manifested by the condition of the children, whose health, strength, and activity, have not only been the admiration of numerous visitors, but have induced many parents to allow their own children a participation in the same advantages. It is well here to observe that in these institutions, the caprice of the children, or the ignorance of the parents, have no influence as to what should be adopted or rejected for the benefit of the pupils; every new proposition is examined, tested, and decided upon by a committee of intelligent men, and, if it be considered useful, the invariable practice of it is immediately ordered, which becomes a duty imposed both upon the master and pupil, from whom a rigid superintendence insures a strict compliance.

If it be necessary to multiply the proofs of the beneficial power, which these exercises have upon mankind in general, I can with confidence refer to

a Battalion of the Guards, upon whom, during the course of last year, the experiment was tried. These men, after a few months' practice, improved in their appearance, health, strength, and activity to such an extent as greatly to surprise the officers who had witnessed their first awkward and rude attempts, as well as a numerous company of visitors, amongst whom were many general officers, and eminent medical men, both civil and military, who testified, in the most flattering terms, their conviction of the admirable effects of those exercises, not only as an excellent means of recreation, and of promoting the health and strength, but also in respect to their influence upon the spirits and conduct of the soldier, from amongst whom drunkenness had almost entirely disappeared; in fact, so marked and general was their approbation, as to leave little doubt of the speedy introduction of these exercises throughout the army. Mayo, in his excellent work upon the "Philosophy of Living," has the following quotation: "Sully recommends in the strongest manner to military youth those sports and exercises which form a graceful carriage, and give grace and strength to the limbs. 'I was always,' says he, 'of the same opinion as Henry IV. concerning these exercises. He often asserted that they were

the most solid foundation, not only of discipline, and other military virtues, but also of those noble sentiments, and that elevation of mind, which give one nature superiority over another.' ”

It may not be superfluous to cite another example of the good effects of gymnastics, not only upon young men, but upon those of a more advanced age. A striking instance of this is afforded in the case of a gentleman who, after a conversation with Sir Astley Cooper, and Mr. Abernethy, as to what would most conduce to the promotion of his general health, and what, (if any thing would,) at his time of life, improve his strength and activity, came to consult me upon the subject. He was anxious to know if a man of his years might hope to augment the volume of his muscles, and if it were possible to obtain a degree of strength equal to their increased development, supposing such augmentation could be effected. On my answering him satisfactorily, he determined upon making the trial; he was, at that time, fifty years of age, and accustomed to a country life. Having for a few days instructed him in the practice of a class of exercises suitable to his age and state of health, I gave him written instructions, to enable him to continue the same gradual course after his return home. This, I have since learned, he continued

for many years, during which I lost sight of him. In the beginning of June, 1841, I received a visit and most grateful acknowledgments from a gentleman of about sixty-nine years of age, whose strength, health, and activity were certainly not surpassed by many of my young beginners with no small pretensions to these qualifications. This gentleman proved to be my former pupil of fifty, who for the last nineteen years had constantly, for half an hour every day, followed my instructions. He now resides in London, and attends the Gymnasium three times a week.

In dwelling upon the necessity of the practice of these exercises, the object of which is, I cannot too often repeat, to establish and maintain the body in health and activity, and prevent those diseases to whose influence the man of sedentary habits is particularly liable, amongst which, dyspepsia, with its miserable train of consequences, stands foremost, where medicine too often fails to relieve, I shall confine myself to such only as may be easily practised, are sure in their operation, and suitable to the generality of persons exposed to this variable climate, and who must conform to the ordinary customs of the country; it is certain that an hour passed in a modern gymnasium, properly employed, will stimulate the body in such a man-

ner, as to occasion a genial flow of spirits, a proper equilibrium in the functions of those organs, upon the proper tone of which depends the preservation of health and strength, and not only this, but, as one of the most intelligent of our nobility once observed to me, "The mere looking on is of no slight service, by the excitement and relaxation of mind it is calculated to produce."

I will add one observation, which I trust will not be considered either misplaced or impertinent, when addressed to the mind of every intelligent and philosophic Englishman:—Great Britain, with the best possible elements for the purpose, is the only country in which the improvement of the human species has been grossly neglected, whilst that of the brute has been cultivated beyond all precedent.

Most of the professors who have taken upon themselves the responsibility of directing the gymnastic exercises, from a want of better information, have fallen into the fatal error of applying them indiscriminately, without regard either to age, sex, or temperament, blindly advising the same quality and quantity of exercise to the strong and the weak, the healthy and the sick, without order or system. They do not seem to be aware that what may be beneficial in good health may

be seriously injurious to the debilitated frame of the invalid, whose relaxed muscular fibres are capable of undergoing only a very limited portion of judiciously selected exercises ; this is applicable also to children of different ages and constitutions, and those who begin at an advanced age.

Experience has proved a thousand times, and every day teaches us, that any thing, however good and excellent in itself, by being misused, or ill-timed, may be entirely perverted ; this is the case most particularly with gymnastics, upon the misapplication of which some danger and evil may, nay, must be, consequent. It therefore requires the superintendence of a competent professor, not only acquainted with the mechanical part of the art, but one also, who, by assiduous study and long experience, has acquired a competent knowledge of the various exercises, with their immediate and remote effects. The learned author of " *Philosophy of Living*," who cannot be too frequently quoted, observes : " That it is to be understood that exercise, to be salutary and to strengthen, must have its limits ; immoderate exercise will fatigue, exhaust, and permanently weaken the same muscle which moderate exercise would have developed, and which inertia would have rendered powerless, and useless ; the extreme effects

the same, the mean is the best; the temperate exercise of the muscles has other directly local effects that are equally beneficial; the bones become larger and harder, the sinews about the joints stronger, the blood circulates with more vivacity, the contents of the veins are driven onwards to the heart by the pressure of the contractile muscles, and so room is made for a quicker supply of arterial blood, on which nourishment depends." And a little further on, after having spoken of the effects of local exercise, the author adds, "Supposing the exercise not local, but general, the entire frame expands, and acquires vigour, the venous circulation is disembarassed by the continual propulsion of the blood towards the heart, the action of the heart is more free and strong, the animal temperature is raised, the breathing is improved, superfluous fat disappears, transpiration is promoted, the skin becomes fine and clear, and the mind, partaking of the elasticity which the body acquires, is disposed to serenity and cheerfulness." And he concludes with a remark, in which every one must concur, "That an agent which can produce in the frame effects so salutary, must be well deserving of careful study"

As Mr. Mayo so strongly corroborates the opinions of Dr. Hamilton, as to the influence

general exercise upon the body, and adds the further advantageous effects it has upon the mind, it will not be impertinent again to remark that there is no system, except the gymnastic, which so completely ensures the accomplishment of this most desirable object; for there is none other by which every part of the body is called into action, and where the exercise can, with any truth, be called general.

Common observation has taught us that these exercises, if strictly adhered to, and practised with regularity, will gradually develop the muscles of the chest, and those of the back, particularly the *trapezium*, *latissimus dorsi*, *longissimus dorsi*, *sacro-lumbalis*, and the different muscles fixed all along the spine, as well as the *deltoid* muscles, the *flexors* and *extensors* of the arms, and the organs contained in the thorax and the abdomen, whose functions are sensibly affected by them, while the general health and spirits of the individual will be improved and maintained. It is an erroneous opinion that the games which usually engage the play-hours of the school boy are sufficient to insure this desirable object, or that they must at least call into action his muscular energies, so far as to counteract the ill effects of the stooping posture to which he is subjected during the much

longer period he is employed in the school room. If we examine the tendency of these games, I think we shall find that, on the contrary, they are more calculated to confirm the stoop induced by his sedentary occupations, and parents are only disabused of this error when their children return home, well perhaps in health, but having acquired that deformed appearance known by the name of "round shoulders," which, attributing to carelessness on the part of the child, they endeavour to correct by continually telling him to "sit upright;" but this he is not able to do by any simple action of the muscles, unassisted by some system of gradual and general exertion. They would not, indeed, be surprised at such a result, if they had paid any attention to the nature of these games, most of which are performed by a strong action of the anterior flexor muscles of the trunk and upper extremities, which occasion a powerful contraction of the anterior parts of the body, and a consequent stooping forward of the whole frame, such as may be observed in watermen and sailors.

An unpardonable indifference seems to prevail amongst the generality of parents to all that concerns the corporal education of their children, particularly their daughters. Were they to use as much caution to prevent deformity as they evince

eagerness to remedy it, or to obtain even the slightest amelioration of it, when their own neglect or carelessness has suffered it to encrease till there is scarcely a hope of cure, they would spare their children much suffering, and themselves much anxiety, and conscious regret. The last part of this work will be devoted to this subject.

Notwithstanding the light which science has thrown upon society, and the advice of men whose position, knowledge and experience should carry the weight of indisputable authority, I have remarked two great obstacles to the introduction of a good system of physical education, the one is paternal weakness; I have known parents who, after having been informed by their physician of the inadequacy of medical treatment, and the necessity of some scheme of regular exercise, have brought their children to my gymnasium, seemingly for no other purpose than to consult their inclination, and have actually asked them if such and such an exercise would be agreeable or not; though they would have forced them to swallow the most nauseous medicine. The consequence has been that the children, being in a debilitated state, a constant concomitant of which is an almost unconquerable disinclination to exertion, have, upon the first trial, expressed a distaste to the whole

thing, and the parents, neglecting their imperative duty, have so far suffered parental weakness to get the better of their understanding as to withdraw their children, without considering how utterly incompetent they were to form an opinion upon such a subject; and having thus treated with contempt the conscientious advice of some skilful physician, lest they should hurt the morbid sensibility of a child, have sown the seeds of future misery and regret. Why is it, that they do not display the same judgment in the direction of the corporal, as they do with respect to the intellectual education of their children? How many of those youths who are sent to our various schools and colleges are pleased with the studies to which they are compelled to attend it would be difficult to say; the number is I should think very limited, yet their relatives seldom feel it necessary to consult them in *that* particular, perfectly regardless whether they be agreeable to them or not, as, then, the established utility of the study in the school room renders the prosecution of it imperative, why should not the same firmness and decision be exerted to enforce the education of the body, particularly as I have before shewn how great an agent it is in developing the powers of the mind.

The other, and perhaps, as powerful an obstacle, is to be found in the ignorant self sufficiency of some parents, who though they have never for a moment thought upon the subject till it has been forced upon them by the debility or deformity of some child, (not at all aware how powerful an agent for good or for evil the gymnastic system is) profoundly ignorant of the nature of their child's particular case, and of his physical stamina to undergo the exertion, not knowing even whether the exercises should be applied locally or generally, have thought fit to take upon themselves the responsibility of deciding upon the course which ought to be pursued; and yet these very persons will accuse of impertinence the professor who has perhaps for years applied the whole energies of his mind to this science, who must have studied deeply, have read much, and observed accurately, in order to have obtained a competent knowledge of the animal mechanism, its muscular construction and appliances, as well as the immediate and remote effect of each exercise, because he has been willing to give them the advantage of his experience, and desired to enlighten them where confessedly they had not a single datum upon which to form an opinion; it is however one of the caprices which unfortunately stand in the way of almost every

improvement. It would indeed be worse than impertinent for any man to offer himself to the public as a professor of the system we are considering, and undertake to apply it to those who may be placed under his direction, without having endeavoured to the best of his ability to make himself master of the knowledge required, where misapplication may occasion so much mischief.

What has been written with respect to the conduct of parents, has been written conscientiously, without effort to please, certainly without intention to offend; but simply to state facts, by the consideration of which, all who have the disposition, may profit.

Much happier would it have been for many families, had the physical gone hand in hand with the mental education, and strength and symmetry of person been added to intellectual acquirement; Dr. Londe (*) has made the following remarks, “ *separer l'éducation des sens externes et des membres, de l'éducation du Cerveau, c'est évidemment agir en sens inverse des lois de la nature, c'est détruire l'harmonie primitive qu'elle a établie entre toutes les parties de l'individu; c'est mutiler l'hom-*

(*) Gymnastique Médicale.

me, c'est mettre obstacle à sa félicité ;" That a good figure is the best letter of introduction, has become a proverb. It is a sort of master of the ceremonies to bespeak a favorable reception for whatever may emanate from the mind. Who has not felt how much grace and elegance of person have given effect to the eloquence of the orator either at the bar, in the senate, or the pulpit. It has been said of Wilkes, who was a remarkably plain man, that he used to boast if he had the advantage of half an hour in the company of the ladies, that he did not fear the rivalry of the handsomest man in Europe. If that rival had been possessed of equal powers of mind, I should have little cared what odds I staked upon the result ; indeed there is no situation in which an imposing and active frame in man, and a beautiful figure with ease of motion in woman, are not of the greatest advantage.

It is to be regretted, that some superintendent of one of our numerous public institutions has not stepped forward, with praiseworthy independence, to convince parents and guardians of the importance of bestowing the same care upon the improvement of the body as has been hitherto, too exclusively, applied to the cultivation of the mind. Is it not as much a part of our identity, at least in

this world? We are told that man is made after God's own image, is it not therefore worth our most serious attention and highest cultivation? There is not a hero of romance, of however ancient a date, who has not been decked with the *beau ideal* of personal beauty, nor is there an authoress from the time of Miss Burney, Charlotte Smith, and Mrs. Ratcliffe, down to the present moment, who has not dedicated page after page to describe the strength, symmetry, and activity of her favorite. This perhaps is not so much to be wondered at; but have not Homer and Sir Walter Scott, with Shakspeare, and the whole train of intermediate poets and novelists done the same thing in every language? How is it, then, that with so much admiration of personal endowments, we do not take more pains to ensure them to our children, or that, when first committed to our own care, we should be so indifferent to the attainment of them ourselves?

Some indeed have tolerated the introduction of a part of these exercises into their schools, but have considered them of too little importance to have given them the attention they deserve, and looking upon them in the light of a plaything, have suffered the boys to have uncontrollable access to the various instruments, and use them in-

discriminately ; mischief may sometimes have been occasioned by that neglect, but I am justified in characterizing this as the *abuse*, and not as the use of the science.

I think it imperative that any system, which it may be thought expedient to adopt, should be made a part of school discipline, and should not be left to the caprice of the pupil, but should be enforced with the same rigour as any other lesson ; that the hours appropriated to it should be considered *school hours*, and should not be taken from those of recreation, as has hitherto been the case where any thing of the sort has been attempted ; one hour a day three times a week is sufficient (a small sacrifice of time from the study of Greek and Latin.) The boys should not be permitted to execute any of these exercises, or use any of the instruments, except under the immediate superintendence of a proper person, whose judgment will decide how far each individual boy ought to go, as excess of exercise must be avoided ; each boy should be examined by a medical man previous to commencing even the preliminary exercises, in order that they may not be resorted to where disease may render them injurious, always taking into consideration that deformity or weakness is not organic disease, but the

consequence of it, whilst on the other hand, disease is more frequently produced by deformity, arising from external causes, for the prevention, and removal of which, these exercises are particularly adapted and eminently efficacious.

Having, I trust, clearly proved the advantage, indeed the necessity, of a system of exercises beyond those, incidental to the common occupations or amusements of society, to the improvement, nay, the very sanity of the body, up that period at which it ceases to be capable of further advancement, and as a means of preserving it in its acquired condition as long as possible; let us consider how far the modifications of such a system may be applicable to the decline of life, whether as a continuance of a practice already understood and persevered in, or to be for the first time commenced. In the former instance, it will be advisable, that from the age of *forty* to *fifty*, according to the condition of the subject; laborious exercises should be discontinued by degrees, and that a new species should be adopted, for which purpose I have invented a very simple apparatus called the *Gymnasticon*, which occupying but little space, may be placed in the corner of a bed-chamber or dressing room, and may be used with the best effects to any age, keeping the mus-

cles energetic, the joints flexible, the various organs in an healthy state, and the whole to the last, if I may be allowed the expression, in an useable condition. In the latter I am persuaded that it may be resorted to with every chance of benefit. To those, who from their occupations are almost precluded from the use of exercise, a regular and systematic course is of the utmost importance; and here I must remark, that walking or even riding through the parks, as is the case in London, are by no means sufficient to keep the body in condition, and if they were, how few, particularly in large towns, can afford the three or four hours a day necessary to make either of them available; to such I would strenuously recommend the gymnasium, the proper use of which from ten minutes to half an hour will effect more than four hours of either walking or riding. That scarcely any age is too late at which to begin a new and easy mode of exercise, I have the strongest proof in the gentleman before mentioned, as having on his return to London attended my gymnasium, who in his seventieth year commenced fencing under my direction and still continues to practice it with considerable success and benefit to his health. he shortly lost twenty four pounds of superfluous weight without any diminution in the size or vi-

guour of his limbs, on the contrary, he acquired an increased energy throughout his whole system; It may be said, perhaps, that his previous habit of strong exercise enabled him to accomplish this, but it will be recollected that he did not even begin that till he was turned fifty.

Another class, then, to whom I would even more strongly recommend this machine, is composed of those, who, from their various occupations during the earlier and middle periods of life, have been precluded the use of any specific mode of exercise, and have retired from their usual engagements and occupations: I should advice such to appropriate *with regularity* some particular part of the day to the various means by which it is capable of calling into action the numerous functions of the body, as upon the due proportion of exercise that each undergoes depends the health of the whole; for how often do we see persons so situated, under the mistaken impression that the opposite of those imperative exertions, with which they have become so tired and disgusted, must be true happiness, and feeling that the enjoyment of "those long summer days of indolence and ease," to which they have looked forward with such pleasing anticipation, is at length within their power, have sunk into the enervating habits of listless inacti-

vity, and suffered under all the horrors of *ennui* and who, though "throw but a stone the giant dies," have fancied themselves incapable even of so trifling an effort; Dr. Thomas Garnett (*) in speaking of the sthenic as asthenic diseases which generally affect the higher classes of society, says, "exercise and temperance will do infinitely more than medicine. By their means, most diseases may be overcome; but without them we may administer drugs as long as we please.

The part of the day I have generally recommended for exercise, to the numerous middle aged gentleman who make use of the gymnasium, is the morning, before or during dressing, as the limbs and trunk are then more free from confinement and the exertion necessary prepares them to enjoy their breakfast in a higher degree.

(*) Popular lectures on zoonomia.

PART SECOND.

OBSERVATIONS
ON THE
PHYSICAL EDUCATION
OF
YOUNG LADIES,
AND
ON THE PREVENTION AND REMOVAL
OF
SPINAL DEFORMITIES.

Love did corrupt frail nature with a bribe
To place an envious mountain on my back,
Where sits deformity to mock my body.

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I have no brother, I'm like no brother,
And this word love, which grey beards call divine,
Be resident in men, like one another
And not in me, I am myself alone.

SHAKSPERE.

THIS is painted with great beauty and force, and that almost supernatural insight into the secret workings of the soul, in the delineation of which Shakspeare stands so pre-eminent, a picture, that

ought to be strongly impressed upon the memory of every parent, and then we should not be shocked by seeing so many unfortunate subjects, growing up around us to shew how true it is to nature. Not more descriptive of the powerful, but ill directed energies of a worldly man, than the retiring sensibility of a delicate woman. For what can be more distressing, than to contemplate a young and ardent mind, giving vigour and intelligence to a form lovely and attractive, up to the age of fourteen or fifteen, upon whose back deformity has been permitted in a few years to gain a lasting station, to blast these highly cherished attributes, and mock the very names of wife and mother, driving her from society, to brood in solitude over its unjust neglect, and in the musings of a disappointed spirit, “to dream of transports she is not to know,” till shrinking with a jealous fear of pity or contempt, from every one who approaches her, she becomes a prey to the morbid feelings of a misanthrope.

To woman then, *form* involves consequences not less fatal to her happiness on the one hand, than it is the instrument of her triumphs on the other. I shall, therefore, having sufficiently, I trust, demonstrated the advantages to be derived from a well directed attention to the judicious education of the physical construction of man, proceed

to offer a few remarks, that appear to me important, upon the cultivation of the female figure in reference to its elegance, activity and ease; and to those parts which are indispensable to health and spirits in the earlier periods of life. It is almost superfluous to observe, that health and spirits are necessary to the successful acquirement of every mental, as well as corporal accomplishment; How much, then, is it to be regretted, that by the present modes of education, woman is but too frequently exposed to the danger of contracting a variety of deformities, particularly of the spine and chest, generally accompanied by palpitations of the heart, dyspnœa, dyspepsia, and pains in some part of the back; these remarks have been suggested by observations made with unremitting attention, during a long and painful experience.— Painful from the contemplation of the numerous cases which have been intrusted to my immediate care, in which deformities of the spine and chest, prostration of muscular energy, depression of spirits, loss of appetite, and even weakness of intellect, have been the result of the most culpable neglect, and the want of critical and periodical examinations of the person, which should frequently be made during the growth of the young subject. I am the more anxious to impress the propriety of periodical

and frequent examinations upon the minds of such of my readers, as may have the charge of young ladies, as almost all the cases of curvature of the spine which have been brought to me, have been of long standing, though discovered perhaps only a few days previous to my seeing the individual, and the more painful, because in every instance it has been obvious, that a moderate application of exercise judiciously distributed through every part of the body, would have prevented the evil, and that an earlier discovery of it would, under proper and scientific treatment, easily and speedily have led to the removal of it.

Some of the exercises appropriated to the trunk and the upper extremities seem to be more peremptorily called for in the development of the female form, in consequence of the obstacles which the neglect and want of knowledge of those intrusted with the education of young ladies, particularly, I am sorry to say among the higher orders, oppose to its attaining that perfection of beauty and adaptation, of which it is so conspicuously capable, for it must strike the most superficial observer that the piano, the drawing board, the embroidery frame, and the work table, and above all in its baneful influence the wearing stays, if not met by some *counteracting principle*, must inevi-

tably produce contraction of the chest, advancement of the shoulders and depression of head forwards and downwards, than which nothing can be more detrimental to the organs of ^{the}transpiration and the development of the bust; hence consumption and spinal deformity may too frequently trace their origin.

Mr. Lionel J. Beale, in his excellent treatise on deformities says, speaking of lateral curvatures. "This is the most common form of spinal distortion: indeed, there are few delicate females, in the higher and middle ranks of life, whose figure is not more or less affected by it, but often in so slight a degree, as not to attract the notice even of the individual herself. (*) From the early application of stays: from the practice of keeping girls at work or study, in a sitting posture, for many hours daily: from too little exercise, and consequent delicacy of health: these, added to a habit of leaning, or indulgence in any other attitudes, weaken the muscles of the back and cause a deviation of the spine in the lumbar region." And further on he observes that, "happiness should be the end of every system of education; but however beautiful may be the precepts, however excellent

(*) Hence the necessity of periodical examinations.

the principles inculcated, however highly the mind may be adorned, without health, these excellencies cannot be enjoyed. We too often witness minds endowed with almost every human perfection, struggling through life tied to a crazy constitution, the consequence of the greater attention paid to the mental capacity than to the physical frame."

From an unceasing and accurate attention to the very numerous cases of spinal curvatures, which have come under my observation, and indeed under my immediate care, "I am convinced that they arise much more frequently from unequal strength in the antagonist muscles, however produced, than from inflammation of fibro-cartilages or caries of the bones, particularly if the child has been straight till the age of eight or ten years old; these cases unfortunately are seldom brought under the observation of those, who having made them the subject of their study, have after thorough investigation and the advantage of a long experience, discovered the most successful method of treating them, till they are too far advanced, and this either from ignorance, or under the mistaken idea that the child will outgrow any little deviation of the back bone or contraction of the chest, an anticipation as likely to be realized as the expedient which the inventive genius of Abel Handy, in the

play of *Spead the plough*, devised to extinguish the fire, when he had set the castle in a blaze," I say Bod I have it, perhaps it will go out of itself." My great object is to call the attention of mothers, governesses and all persons intrusted with the care of youth to the slightest irregularity of form in any part of the body, from the neglect of which, I have no hesitation in stating, that many an unfortunate object, has had reason through a long and painful life to curse the carelessness and want of attention of those, who have entailed the misery upon them.

Mr. John Shaw (*) in speaking of the advice which has been but too frequently given by medical gentlemen, to attend only to the general health as a means of curing spinal deformities says, "They have been but too well convinced of the danger of trusting to the advice of attending to the state of the bowels, and using tonics, shower baths, spunging, friction, &c., when the spine is once curved, it is as little likely to be remedied by such means, as a crooked tree is to be made to grow straight by merely manuring and watering it, But notwithstanding this apparently obvious conclusion, nine in ten of the girls who are much distorted have gone on for years in the hopes that

(*) Observations on defects of the spine and chest.

such means will be sufficient to restore the figure.

If not one amongst the best educated of the medical profession has as yet been able to discover a system of practice which may hold out a rational hope of cure or even of alleviation of spinal curvature, with the advantage of anatomical knowledge, extended opportunities of observation, "with all appliances and means to boot," is it not very much to be deplored that parents, and those engaged in the superintendence of children, and youths of both sexes, in the present day, should intrust so many, laboring under that class of deformity, to the care of persons, not even pretending to the rudiments of a philosophical education, or to the possession of any knowledge of the frame or the muscles by which it is supported or put in motion; some mechanic perhaps, who having failed in his own business, has imposed upon the ignorant some new invented iron, which he has been able to forge and polish, and, with the assistance of the shoe maker, to add strops and bandages, has given it the appearance of utility, or some milliner who solicits our confidence to stays and whalebone. Is it not lamentable, I say, that they should suffer persons of this description, to inflict upon their unfortunate patients, for months, even for years, tortures to be exceeded only by the inquisition, condemning

them to lie upon hard inclined planes, or to be stretched upon mechanical beds, in the vain hope that by elongation in a reclining posture with no weight to support, the spine may become straight, and be enabled, when upright, to sustain what is above the curvature. The least exertion of common sense would convince one of the impossibility of such an effect, when it is evident that the spine of itself is perfectly incompetent to sustain the incumbent weight of the head and superior extremities, unassisted by the muscles, which, like the shrouds of a mast, are as necessary to its support when at rest as they are agents in its motion; and any extraneous support, by taking away the necessity of action, must render these very muscles weak and useless. Such has always been found to be the effect of irons, bandages, stays, &c., they may conceal the defect for a time; but never can cure it. It is imperative that the cause of the deformity should be known before any mode of treatment be resorted to, and where are such persons to look for it, and how can they judge of it if found? whether it be caries of the bones, inflammation of the introvertebral substance, weakness of the muscles, or merely the effect of a bad habit of carriage. In the two first instances, pressure of any kind must be most prejudicial, and sometimes lead to

paralysis and even to death, and in the two latter it is utterly useless, as it is a great mistake to condemn a person to inactivity in the horizontal position, when exercise alone is required; the practice too, is now beginning to be condemned by some of our ablest physicians as absurd and dangerous, and yet there are persons to be found, who, frightened at their own carelessness and neglect, in defiance of better advice, will resort to these people, like drowning persons catching at a straw, to save themselves from the reproach of seeing a deformed object constantly before their eyes in its after life, and the feeling that it is conscious to whose culpable apathy it owes its misery.

Is there any reasonable person, who after a moments' reflection, will not acknowledge that continual repose must increase the debilitated state of muscles instead of restoring their proper energy; let any strong man in good health, by way of experiment, take to his bed for two or three months together without any exertion, though he may keep during the time to his regular way of living, he will soon be convinced, that not only his health will be materially injured, but that the muscles of his body and limbs will be very far from adequate to sustain his former labor; and here I cannot too strongly reprobate the constant injunction to the

young girl to sit upright and the endeavour to make her maintain, during her school hours, a posture, which a strong man would not be competent to, even for ten minutes, and the various means which are resorted to, to force nature into a proper form ; all and each of which must of necessity be injurious by occasioning improper pressure, or by artificial support, delegating the duty of the muscles to irons, boards, and bandages, thereby rendering them more relaxed and unequal, till they eventually become enervated and emaciated ; in consequence of which at the age of twenty, permanent and incurable deformity is often the dreadful consequence ; how much more rational does it appear, if it be possible (and I confidently assert it *is* possible) by a proper application of well regulated exercises, to confirm the weakened muscles, at the same time that the stronger antagonists may be kept in a state of inaction ; to call upon nature to do, what she is most competent, and, if assisted, most willing to do, perform her own work ; and by establishing a permanent equilibrium prevent any threatened deformity.

In a former work on spinal deformity, published by me twelve years ago, I made the following remarks : the reader will, perhaps, be astonished at the numerous instances of deformity arising from

distortion of the spine, especially among English ladies, who, from the exquisite delicacy of their complexion, and the unrivalled beauty of their features, are commonly called by foreigners the *Georgians* of Europe. The following observations are nevertheless entitled to confidence ; for they are the fruit of long and laborious enquiry. Having, some years since, applied myself to the discovery of the means of correcting those deformities, I thought it necessary, as a preliminary step, to ascertain as nearly as possible, the number of persons thus afflicted. Determined to conduct the enquiry with the most scrupulous exactness, I commenced with children under the age of nine or ten years. These I found generally free from every defect of conformation. I next directed my attention to children between the ages of ten and fourteen. Among the children of this class, especially among the females, I observed that deformities were numerous. The absence of deformity observable among children of the first class, I could attribute to no other cause than to the unrestricted freedom of movement allowed them in consequence of their not being yet confined to severe or serious study ; and its prevalence among children of the second class, I felt myself compelled to ascribe to the opposite cause. I observed also, that the boys of this class

were less generally affected with deformity than the girls; a circumstance which could be accounted for only by the exercises which the former are permitted to take during their hours of recreation. Pursuing my enquiries still further, I observed that among females between the ages of fifteen and twenty-five, deformities were yet more common. I concluded therefore that their physical education had been either totally neglected, or most injudiciously conducted. Indeed, it may be safely affirmed, that fifteen in every twenty of the females of this class had her person distorted in a greater or less degree, nor was the distortion in any instance so inconsiderable as to escape the scrutiny of a practised eye, although much has been done to conceal such defects from the eye, of an ordinary observer by the ingenuity of dress-makers and staymakers. The latter, it may not be impertinent to remark, would add considerably to their claims on the gratitude of the fair sex, by diminishing the number and the volume of the hard substances of which stays are made.

Many females have very erroneous notions of what is called a fine figure. They fancy, that in proportion as the waist is slender, they are to be considered well made, and therefore compress that part of the body so as to render its volume consi-

derably less. Such compression cannot but impede the circulation of the blood, and the action of the organs of the stomach, and prove exceedingly injurious to the health. It is therefore scarcely to be supposed that the votaries of fashion would continue so fatal a practice, did they but reflect that the gracefulness of the waist consists in its being round, erect, and duly proportioned to the rest of the body; and not in its resembling a small pivot, so placed between the hips and the trunk, as to leave a ridiculous bend in the region of the loins.

Had this extensive and scrupulous enquiry left any doubt on my mind, that one of the principal causes of bodily deformity among young females, was the want of an exercise capable of giving to the muscles of the loins and the back the degree of vigour necessary to support the vertebral column in its erect position, it would have been removed by a little attention to the cases of children between the ages of ten and fifteen. Among these, we observe sometimes a decay of health, and sometimes too rapid a growth. In each case the muscles are found to be extremely weak, and it is scarcely necessary to remark that such children do not, for a long time, acquire their due portion of strength, unless the development of their mus-

cular power be assisted by the judicious application of a series of nicely graduated exercises. But, if they are kept to constant study or labour, they want strength of loins sufficient to support the head, the trunk, and the arms; their body inclines to one side or the other in order to relieve the loins from its weight, and in a little time deformity manifests itself in the elevation of one shoulder, which is an unequivocal symptom of distortion in the vertebral column. For one bend having been produced in the vertebræ of the loins, another will inevitably take place in those of the back, so as to restore the equilibrium of the body; a circumstance which many are accustomed to attribute to awkwardness of habit, or perverseness of will, without once suspecting that it is the inevitable result of weakness.

It would be however the greatest imprudence to trust to exercise alone for the correction of all deformities of body. For, as the causes in which they originate are various, the modes of treating them must also be various. Let us suppose for instance, that the deformity proceeds from an inflammation of the inter-vertebral substance or cariousness in the bones; in such cases it is clear that, if we began by the application of exercise, we should but encrease the evil, and this fact alone is suffi-

cient to shew that, when infants are afflicted with distortion of the spine it is indispensably necessary to submit their cases to an experienced physician, who, by examining the vertebræ, and by observing the ordinary symptons, will at once ascertain the cause to which the deformity is to be ascribed and the mode of treatment which should be followed.

From a conviction that bodily exercise was necessary to the health of their children, the majority of parents and principals of schools (for want of a better system,) had been accustomed to place them under the care of a common soldier, styled a *drill-master*. In order to exercise the children and give them what was considered a graceful carriage, the drill-master used to keep them marching for a long time, with their bodies and arms placed like those of a grenadier in the ranks. Young ladies who had gone through this course of discipline, derived from it the enviable advantage of being able to enter a drawing room with the awkward stiffness of manner which the common soldier exhibits in presence of his superior. This system was too obviously absurd and ridiculous to take a lasting hold upon the approbation of what is called refined society. Some of the masters therefore, in order to cast into the shade their less enterprising competitors, introduced what they deemed a great

improvement of the old plan, by teaching young ladies to march with their hips and stomach thrown forward, and their shoulders and arms thrown as far back as possible. A necessary consequence of this was the projection of the head into a ridiculous position, which they endeavoured to correct by a still more ridiculous elevation of the nose and chin. The figure presented by the whole of the pupil's person (nearly resembling an S) is too frequently to be met with in our places of public resort, to render a more minute description necessary even to the most inattentive observer. There was one point however in which all the masters agreed, much as they differed in others. They seem to have been unanimous as to the propriety of compelling all the young ladies, big and little, to march together and at the same pace. It is obvious that the lesser children must in this case have been obliged to strain the hips in order to take a stride sufficiently long to keep up with their more grown companions, and that the latter, as often as they had occasion to walk with a gentleman of tall stature, would change their natural gait for the long martial stride which they had practised under the auspices of the *drill-master*.

Notwithstanding the ridiculousness of these practices they continued to spread far and wide,

until the time when the goddess fashion, always capricious in her tastes, introduced those fooleries known by the name of *calisthenics*. From that moment every one was eager to participate in the miraculous effects that were to be produced by these exercises, which were as dangerous to the health, as they were unsuited to the moral delicacy of a lady. At first their novelty caused them to work miracles, if not on their health, at least on the imagination of respectable persons, who fancied they beheld that which never existed. This was sufficient to bring those exercises into high repute; and to furnish me with fresh occasion for astonishment at the power which effrontery exercises over unsuspecting sincerity, and at the risques to which children are exposed by the tenderest affections of their parents. My astonishment was the greater, as I was myself the first who had sketched a course of exercises for young females. This course I had selected from the simplest of those exercises that come under the head of Gymnastics, but afterwards rejected them, perceiving, after mature consideration, that instead of enabling me to attain the end which I had proposed, they were likely to produce effects of a very different nature. I had designed to exclude the use of all instruments, tending to induce the

necessity of the violent movements which could not but be dangerous to the pupils: but the new propagators of *calisthenics* (which are almost the same as those I had rejected,) not knowing the dangers to which they were exposing their pupils, and finding the speculation profitable, continued to make them climb ropes, perform feats of strength with wooden bars (at the risk of producing in their arms a development of muscle sufficient for an Athletic,) leap through a hoop with the address of a clown at Astley's, and flourish a stick with all the dexterity of a posture-master. At length the time arrived when parents had to repent of their mistaken confidence, and to lament its consequences as they manifested themselves in the appearance of bodily deformities, such as had never been known before. But that such must have been the necessary result of those exercises, on persons affected by any of the predisposing causes of spinal distortion already mentioned, would appear even on the slightest examination. A young girl, for example, has in consequence of sickness or a bad habit, the muscles of one side of the body weaker than those of the other; she is evidently liable to a deviation of the vertebral column, arising from want of support in the weaker side. In addition to this she is

obliged to stand erect for an hour at a time performing violent exercises. The weight of her head, arms, and trunk (already more than she is able to support,) is increased by the use of a heavy instrument, and she is compelled to exercise both arms equally. It requires no great penetration to see that the weaker side will have but a very small share in this movement, and that it cannot be executed but by a great exertion of the stronger side, whose strength will thus be augmented at the expense of the weaker. Deformity will now begin to manifest itself, and the health, instead of improving, will begin to grow worse from day to day."

When we look round and see how few, in any rank of society, are so fortunate as to possess a good figure, it is natural to enquire, why so beautiful an object is so rarely to be met with; the reason may, I think, be traced to the influence of the present modes of education, and style of dress, to an unaccountable apathy upon the subject, and an ignorance of the means, which are necessary to attain it, or indeed of what is calculated to preserve it, where Nature has done her part, which by the bye, is much oftener the case than we are inclined to believe.

Now let us see how far I am justified with respect to education. It is the general practice

to make use of the back boards, collars, high and straight-backed chairs, stays, and many other coercive instruments, to force the body into those attitudes, which are supposed to be conducive to, what is called, a good carriage. It is now our object to investigate whether, and how, they effect this purpose. Does the child bring forward her shoulders, and depress her head in the same direction, the back-board and collar are put into immediate requisition, and she is forced into a constrained position, which it would require great exertion as well as strength to sustain even for a short time; the consequence is, that to obtain ease and relieve the tired muscles of her back and neck she leans against the front of the collar and the straps of the board, thereby depriving those muscles which are designed for her support of their due proportion of exercise; they will naturally, by degrees, grow more and more inactive, their fibres will be relaxed and elongated, and eventually they will so far lose their power as not to be capable, *when unassisted*, of sustaining the weight of the head and shoulders, and thus the alteration of position, which invariably follows the removal of these instruments, will be found so great a relief, that the stoop they are intended to prevent, will become the constant and confirmed habit of

the body. Nor does the evil end here, the frame will soon be affected by the derangement of the muscular power, by the depression of the head forwards, by the curvature outwards and backwards of the vertebræ of the dorsal region, and the protrusion of the blade bones backwards. The anterior points of the ribs will be depressed into too close a contact, the clavicle will not attain its proper length, the breast bone will be forced downwards and inwards, and the area of the chest so much contracted, that the organs contained therein will not have sufficient room (see case 1st.) for the exercise of their proper functions; hence the origin of palpitation of the heart, pulmonary complaints, and premature death; besides the contraction of the cavity of the chest, if Dr. Riadore, be borne out in his assumption, that so much evil is to be traced to irritation of that part of the nervous system contained in the spinal column and it is evident that undue pressure upon the nerves, as they pass through the foramens of the vertebræ affected by the curvature will produce that irritation, the organs to which they lead must be more or less deranged. If the nerves for instance, which govern the vibrations of the heart be pressed upon, the probable consequence will be palpitation or spasmodic action of that organ, or if those upon which

the absorbing vessels of the pericardium, the bag which surrounds the heart be rendered inactive by the same means; the fluid contained therein will become too redundant and difficulty of breathing will be the result and so on through the whole body. That pain is produced by such pressure and ceases when it is taken off, is clearly shewn by case No. 1, in the appendix, where by the gradual removal of the compression, though the patient had suffered under it for five years, two weeks were sufficient to get rid of the pain, which Mr. Combe has most beautifully explained in his work upon the constitution of men in relation to external objects. Amongst other benevolent purposes, is the infallible agent, which in good will towards the creature, the Creator has mercifully ordained to indicate the presence of disease. If even a small branch of a nerve be acted upon, the whole system will not unfrequently be put out of order. A young lady of about thirteen years of age, upon any alarm, or if in the least agitated or even under the influence of anxiety to learn, would be seized with spasms of the muscles of the face and limbs, the knees would be drawn irresistibly upwards, the fingers contracted and stiff; from this, after its having baffled the skill of some of the most eminent men both in London and in the

country for several months, she was relieved in a few moments by the extraction of a tooth. If pressure upon the nerves be the consequence of curvature of the spine, and the nerves so pressed be the proximate cause of so many diseases as Dr. Riadore would induce us to believe, it follows that the general health depends much more upon the straightness of the spine than is generally believed. This is amply corroborated by the cases in the appendix, where every part of the body in one or the other of them has been affected by the curvatures. It has been said that disease does not always accompany a crooked spine, but who shall say that it does not affect the growth in youth, to which period of life its origin almost exclusively belongs, or retard the development of the more important organs; at the same time it is unfortunately true that irritation may take place in a perfectly straight one, in which case Dr. Riadore's practice seems likely to be eminently successful; the bony case then which contains the medulla spinalis, and with it, so much of good and evil, demands our utmost attention. Would not the strengthening those muscles from the weakness and incapacity of which the mischief arises be a rational and proper object of that attention, either to prevent or cure? The straight backed chair is as fatal in its consequen-

ces; The poor child is forced to sit bolt upright without relaxation during her school hours, a position which it is evident that a strong man cannot maintain for any great length of time; since it is found necessary to permit the soldier frequently to stand at ease to relieve him from the fatigue, and pain, which is produced by even a short continuance of the upright posture of the upper part of his body, it is thought expedient he should adopt; how then can a young girl maintain it without injury, particularly at a time of life, when it is asserted by physiologists, that in growth, the bones take precedence of the muscles, and that the latter being elongated by the wider separation of their points of insertion become weaker; even if the chair be not used, as she is not permitted to lean forwards, to relieve the tired muscles of her back she will suffer one of her shoulders to fall and then she immediately hears, "Miss keep your shoulders even, you are sitting all on one side." Instead of resuming the upright position she has found so fatiguing, she will lower the higher shoulder to a level with the depressed one by a curvature of the spine, and finding she can deceive her governess by this means she will constantly resort to this more easy posture and always on the same side, till it will become a habit, and the curvature

grow into a confirmed deformity ; most of the cases, I have been able to observe, have began in this way, and as it is a long time before these deviations become apparent to the casual observer, the *examinations* I have before alluded to are the more imperatively required.

Is it not enough to know, that almost all the positions of the body, which are indispensable to the attainment of the accomplishments of the present day, militate against the formation of a good figure, and healthy constitution, to induce us to exert our whole energies in order to find out some means of counteracting their effects ? Long experience and application to this subject have convinced me, that the piano, the harp, the drawing board, and the never ending train of fancy needle and other works have produced more spinal and thoracic deformities than all the diseases incident to the early periods of female life. Far be it from me to suppose for a moment, that these elegancies, the delight and charm of society, can be laid aside ; nor is it necessary. But I do say, that some *preventive principle of action* constantly co-acting with and counteracting the disfiguring means, by which alone they can be acquired, should be enforced, to rescue the rising generation from the natural consequences of those means, and

preserve that exquisite quality of form, which adds ten-fold to their impression and the admiration they attract: Has any modification of the stays which have been employed for centuries accomplished this great desideratum? as the use of them, in all the varied patterns the ingenuity of the milliner could devise, to give a conventional contour to the shape and of every degree of stiffness, and power of compression and coercion, by which the surgeon thought to cure deformity, has been universal, and the same unfortunate calamities still exist, it is the inevitable conclusion, that not one of them has; but have they not done worse? The late Mr. Cline, than whom there cannot be a better authority, used to tell his pupils, in his lectures given upwards of fifty years ago at St. Thomas's Hospital, that he considered the habit of wearing stays to be the principal origin of the difficulties, which so frequently embarrassed the practice of the accoucheur. And in his lectures upon Midwifery Dr. Thynne, who has undoubtedly done more for that branch of the profession than any other man that ever lived, spoke in still stronger terms; That they are a most pregnant cause of spinal deformity, I think no one acquainted with anatomy, and the prejudicial influence they have upon the frame, will be bold enough to deny. But it is useless perhaps,

and mere waste of paper to enter much into this subject, since the Faculty, with such an intimate knowledge of the mischiefs they occasion, have not more earnestly endeavoured to demonstrate their pernicious effects, and more generally to persuade to their disuse; particularly upon the yielding form from the age of thirteen, about the time, when this abuse of dress and bane of just proportion usually begins; to which form, it is scarcely possible to believe that any Being, endowed with common sense, if convinced, would take upon herself the fearful responsibility, of even the risk, of doing such irreparable injury. Stays are indeed a rich source of emolument, from the numerous necessities they create for professional attendance, through the married life of the mother, and upon the weakly infant, whose young existence, after a few years suffering, they have, in ten thousand instances, made a sacrifice to the vanity and fashionable *tournoure*, of the maiden career of her mother, or rendered it difficult to preserve, with all the anxiety of her parents and watchful attendance of the Faculty, till she herself, under the tyranny of a Goddess, more fatal to her votaries than ever issued from the Pandemonium of the Heathen Mythology, is obliged to adopt the same instrument of inflic-

tion and perpetuate the evil in her turn. Good God! is it not monstrous, that mothers, with the memory of their own sufferings fresh in their minds, should not boldly step forward to protect their daughters from the fatal and ungraceful cause, and resort to stays only as the support of age.

The truth of some *principle of prevention* being required, I have frequently heard acknowledged, but then I am told that the Dancing Master (see case 5,) will put everything to rights; if there be the least tendency to curvature of the spine, dancing will most indubitably increase it, for it is evident that, when there is any lateral deviation from the upright position of the back bone at the lower part of it, the jumping up and down and suddenly alighting upon the toes, whilst the whole weight of the upper part of the body is to be sustained, must throw a great onus upon the curved and displaced vertebræ at the bottom of the spine and produce a consequent strain. How is it then, it may be asked, that the natural curve of the spine at the loins is not liable to be acted upon in the same way? it is because there is a combination of muscles and ligaments sufficiently strong provided for the very purpose of preventing it, which have not the same effect upon a lateral and unnatural curvature. I am sure therefore, that dancing, should

never be used while there is any curvature of the spine.

That a natural and symmetrical conformation in woman is of a higher value, and involves more serious consequences than as a mere object of beauty, to command our admiration or excite our feelings, is I think obvious, when we consider the important position she occupies in creation and her influence upon the physical condition of mankind; an unconstrained figure, then, and expansive chest is more necessary in her case than I have already shewn it to be in man, to afford space for the development of those organs whence the endearing duties and exquisite pleasures of a mother are derived, how much the constitutional welfare of her family depends upon her construction and health, what miseries are perpetuated by her means? Do we not see deformity of person, peculiarities of form, weakness of intellect, with the long train of hereditary diseases, particularly scrophula and consumption, entailed upon many an unfortunate race in the female line; on the other hand, how much of what is good and exalted owes its first germ to woman, and through her generous and affectionate intercourse expands over every class of society, endowing it with manly strength and

female loveliness, heightening its enjoyments, and exalting its character; can then too much pains be taken from her earliest infancy to cultivate those characteristic qualities of person as well as faculties of mind, so singularly formed to conduce to her perfection and extend her power, and to protect her with zealous care from every thing which may have the remotest tendency to detract from her beauty or impede her usefulness, in which it is not less the duty than it is the interest of the whole sex, whether as mothers, nurses, governesses, or when under their own direction most cordially to co-operate.

I have before mentioned the great advantages to be derived from a well organised system of exercises, in reference to the school boy, and if I be right, with respect to him who in his hours of relaxation has a variety of amusements which require great exertion, such as cricket, foot-ball, &c., and whose school hours are not employed in occupations of so injurious a character, it will not be difficult to shew that some system, adapted to her situation and temperament, is still more imperative in the education of the young female; with this object in view, I have arranged a series of gentle and graceful exercises aided by some trifling mechanical applications, sure and

simple in their effects, and which, combined with a few rudiments of dancing, have fully answered, indeed surpassed, my most sanguine expectations and have met with the concurrence and unqualified approbation of many of our highest nobility, whose daughters have been entrusted to my care and have attended my establishment in Jermyn Street, all of whom have not only been satisfied but delighted with the ease of motion and elegance of carriage to which the young ladies had attained, and the symmetry of person which was conspicuous in every position when at rest; they also expressed much surprise at the rapid progress they had made, at the improvement of which the human form is capable, and at the self-possession and command of person, which had been acquired at so early an age, as that, at which some of the young ladies began their lessons: and all this has been accomplished without the use of stiff stays, irons, bandages or ligatures of any kind, and what is of no small advantage, without producing an undue enlargement of the muscles or disturbing that softness of outline which is perhaps the greatest beauty of youth and the most indispensable ingredient of loveliness; these exercises indeed have been found to counteract that

tendency to increase the fore-arm and render it coarse and masculine which the necessary practice of the piano or the harp is calculated to produce.

I shall conclude with a short account of the origin of the application of exercise alone, and unassisted, to the *correction* of deformities as well as to the *formation* of the person, and if I should repeat what has already appeared in the foregoing pages, it will be because I am anxious to impress upon my readers the necessity of some well-digested system, with the advantages to be derived from a judicious use of it, and to point out the inadequacy of the usual modes of treatment, with the dangers to be apprehended from the abuse, even of the best plans. I could not help observing, with some astonishment, the powerful effect which the gymnastic exercises have upon the muscles of the superior extremities, and, through their agency, upon the frame, in the development of the person, by producing a due proportion of strength and balance of action in the antagonist muscles, and putting, as it were, the whole instrument into perfect harmony, and how much, how very much more had been done by the use of them than had hitherto been attained by the means usually employed either to force the body, whilst plastic and growing, into some particular

shape, which arbitrary fashion may have been pleased to prescribe as the most desirable, too often without considering its inapplicability to the purposes of nature ; or, when perhaps under the very means resorted to, they have deviated from it to force the body back again into the same constrained and unnatural position.

That the absurdity of this injurious practice should not have struck even the most ignorant is extraordinary, when it is evident that it is impossible effectually to confine the bones without occasioning at least such pressure upon the surrounding muscles and vessels as to impede their action, and to obstruct the circulation of the blood, so that from inaction and want of nutriment, a wasting of the part is sure to take place, frequently followed by permanent disease and confirmed deformity. The female sex is more particularly obnoxious to this folly. It appeared then, to me, that a modified application of exercise, adapted to the unequal power of the muscles opposed to each other, which always accompanies spinal deformity, to the restoration of the equilibrium of that power, would assist in the correction of such deformity, and lead to the most beneficial results: To accomplish this, a competent knowledge of anatomy became necessary ; I was compelled, therefore, to

attend several courses of lectures upon anatomy, and read much upon the subject, before I dared venture even to experimentalize, as I was aware how much misery might be entailed by an improper application of such a system, or by an over anxiety to produce rapid results where the most moderate exercise only could be borne. Having gone so far, I found that many difficulties still remained to be overcome before I could carry out my idea. How were the muscles, the strengthening of which was to produce the desired effect, to be called into action?—Decidedly not by any instruction I could give to the patients themselves, to put them into voluntary motion, as they would be unconscious even of the existence of many of them, particularly those which act in conjunction with, and in aid of others more immediately under command; for instance, if you lift a weight by the voluntary exertion of the extended arm a great variety of muscles combine to brace and steady the body, if not without your cognizance, certainly without any reference of mind. It was evident, then, that some instruments must be constructed by which any particular muscle, or set of muscles, might be exerted without affecting the rest, and these must of necessity be the creatures of experiment, to have matured which upon any patients

I might have had, would have occupied a life, besides the danger of doing mischief, a single instance of which would have thrown the whole system into disrepute. I began, therefore, at considerable expense, and after a great deal of difficulty and persuasion, to practice upon a number of growing boys, by exercising the muscles on one side, first by one instrument and then by another, till with frequent alterations and accurate adaptation they became adequate to my purpose, and I was enabled to produce curvatures of every description in all the regions of the spine, with or without twisting, and by applying the same means to their antagonists to restore it again to its original form: this I was surprised to find the easier task, shewing that nature is not more firm in resisting injuries than she is co-operative in assisting to remove them. By these means I acquired a perfect control over every muscle of the body, by whose influence any beneficial result might be produced, and as this was not blindly working in the dark upon chance or speculative theories, but acting upon a sound principle, and studying nature herself, by making use of the same means to counteract the effect as induced the cause, the success has been uniform, and without exception, where there has been no organic disease. And I

can now with confidence refer to a practice of more than twenty years for the confirmation of my most anxious expectations, and could, if it were not a breach of confidence, I should consider unpardonable, and one by which I should deserve to lose the high and extensive patronage with which I have been honored, produce a long list of young ladies amongst whom almost every kind of deformity has been corrected under my direction.

One word more with respect to the injury to be apprehended from the use of the reclining board recommended in cases of curvature of the spine which, by the confinement of the head and the inclination of the body to slide downwards, partially suspends the weight upon the vertebræ of the neck without affecting any other part of the spine, under the mistaken idea that by stretching the back bone (supposing it could be stretched by that means through its different regions), for a short time periodically it will eventually grow straight. So far from this being the case, it is obvious, that upon rising from the recumbent posture, the state of the muscles on the inside of the curve being the consequence and not the cause of the sinking of the column, it will be found in the same condition. As it may be easily proved, that they as well as the ligaments have accommodated themselves, to the

relative situations of their origins and insertions ; and that their antagonists on the outside, whose fibres are proportionally elongated and weakened, have been obliged to give way under the pressure and strain laid upon them by the displacing of the vertebræ, and consequent separating of the ribs, and that the vertebræ of the loins and back will again be found in the same position they occupied previous to the patient having been placed upon the inclined plane—for what has been done to perpetuate or even effect a cure ? Have the bones been hardened ? have the fibres, and the tendinous covering of the sacro-lumbalis and longissimus dorsi been developed and strengthened ? or of the other muscles, which combine to support the spine, not more by their insertions than by their volume and firmness, has the equilibrium of the antagonist muscles been restored ? the ~~inter~~-vertebral substances may indeed have recovered their equal thickness, but can they offer such resistance as to prevent the spinal column from returning in a very short time to the original deformity ? It must be recollected also that these kind of curvatures are always accompanied by twists in different parts of the spine. Besides, the dead and heavy drag upon the muscles of the back invariably produces that dull and aching pain which is indicative of injury, the

pressure, too, of the body upon the hard board added to the uneasy and fatiguing posture, will occasion more exhaustion than the most violent gymnastic exercise properly administered, if continued for its effective time only, and by impeding, instead of assisting, the circulation of the blood, it must enfeeble, for want of nutriment, those muscles which are necessary to the support of the upper part of the frame, till by the continuance of this process the energy of the only physical means upon which we can rationally depend for relief is wasted, and the constitution sinks under the painful trial, so that the poor patient is condemned through a comfortless life, uncheered by the careless gaiety and buoyant spirits of childhood, to the privations and miseries which should alone accompany old age, till she drops prematurely into the grave at a time when new faculties and enjoyments are opening upon her more fortunate companions, followed by the mournful reflection and conscious self-reproaches of those to whom the superintendence of her earlier years was intrusted.

The lying upon the back, which has been recommended by some of the most eminent medical men, for want of a better plan, even for so long as one or two years, only makes up in time for what is more rapidly done in the foregoing case with a

more certain destruction of the constitution. (See CASE 3.

Would it not be much better, leaving the stronger muscles the while to grow relaxed by inaction, to strengthen the weaker ones, till they become *sufficiently strong* to counteract their at present more powerful antagonists, and are enable to keep the vertebræ in their proper places, which can be done with more ease and in a shorter time than those unacquainted with the subject are inclined to believe, while the appetite and spirits are improved, and returning health (for the health is always more or less impaired) accelerates and confirms the correction of the deformity; in the early cases, particularly those of curvature of the spine, the steadily progressive improvement and rapid development of those muscles which it was necessary to call into more powerful action, was so great as to surprise as well as to satisfy the patients and their friends, and I really do not believe that the most skilful anatomist or eminent medical man in the full practice of the profession, can imagine the beneficial effects of such a treatment, aided by care and attention to the general health of the patient, unless he has watched the progress of the correction in a variety of cases, and witnessed the perfect restoration; or that he

can be aware of the powerful agent within his reach. At the same time he must add to his already acquired knowledge, the nature and effects of all the exercises which may be useful in different cases, and the invention or possession of a certain number of instruments, to insure the action of any particular muscle, he may wish to exert, without affecting those which ought to remain quiescent; this perhaps would take up too much of his time, better employed upon more important subjects. The objects are, indeed, unfortunately too numerous, though scarcely considered sufficiently so to make them worth the attention of the general practitioner.

As the value of any system can be estimated only by experience or principles established but by the knowledge of facts, I shall proceed to relate a few out of the numerous cases which have been entrusted to my care, in order to shew that they would not have taken place had the system been pursued of which observation has taught me the value, and that the principle followed out to the cure, in every instance the same, though varying in the application, has been based upon a knowledge of facts collected in the course of a long practice, making such comments as I go along, as may appear to me to bear upon the sub-

ject; and because it would take up too much space to enumerate every muscle it was necessary to call into action, or to describe the instruments employed for the purpose, I shall content myself with stating when the patient first came under my direction, and as far and as accurately, as they could be obtained, from the patients and their friends, the time which had elapsed between then, and the discovery of the deformity, with the treatment which occupied that time from week to week.

CASE FIRST.

A young Lady was brought to me in February 1839 aged eighteen, upon making the usual enquiries as to the origin and progress of the complaint, and the previous treatment, upon which much of that to be pursued depends; I found that the rapidity of her growth during her eleventh and twelfth years, had weakened the muscles of the back to such an extent that they were no longer able to sustain the upper part of the body in its proper position. In about a year, deformity of the spine began to manifest itself, by the elevation of the right shoulder, which was, as is too often

the case, attributed to a careless mode of carriage, till in a few months, after a closer examination of her back by her friends the left side over the hip was discovered considerably enlarged, accompanied by a sinking of the right; she was then placed upon the inclined plane, tonics, the cold bath and friction resorted to, but at the expiration of two months a continual and acute pain in the dorsal region supervened, and she became so weak, the appetite and digestion so bad, that she was considered in great danger. They then removed her to the sea side, for the benefit of warm sea bathing and shampooing, at the same time she underwent a course of gymnastic exercises, violent enough for a strong and healthy man; this had the usual effect of strengthening the muscular system generally, but it was soon discovered that the deformity of the back had increased to an alarming extent, as might have been expected from the general and injudicious application of the exercises. The pain in the back also became so oppressive and distressing as to affect her spirits, and from the difficulty of breathing to make her fear that the lungs were affected, the usual consequence which I have shewn attends the contraction of the cavity of the chest (see page 54). From that time, despairing of relief

every effort was abandoned, and nothing was attended to for four years but her general health ; when I first saw her.

Upon examination I distinctly discovered two curves of the vertebral column, one in the dorsal and the other in the lumbar region, besides these curves the vertebral column was twisted in such a way that the transverse process of the lumbar vertebræ were thrust forwards on the left side, this produced a protrusion by the elevation of the *saers-lumbalis* and *longininsus dorsi*, which muscles were entirely concealed on the right, the ribs on the left side of the chest were depressed, whilst those on the right were elevated and separated from each other by the convexity of the curve and the scapula driven backwards ; the appetite, the digestion, and the spirits were as bad as possible, and the constitution fast sinking, with the pain in the back, before alluded to still encreasing.

To enlist the mind in my favor, I told the young lady in presence of her father that I was confident of success, and that the pain between the shoulders should be relieved in a short time, (it entirely left her in a fortnight by the pressure upon the nerve being removed) ; this advance gave them great hopes and had the desired effect

of raising her spirits, as they have both since told me, that they had but little faith in my assertion, that a pain of five years, standing could be relieved in so short a time, after having tried so much before without success; which hopes were further confirmed, when, at the end of three months and a half, the dorsal vertebræ were brought back to their natural position, the muscles of the back on the left side had recovered their proper length and size, the scapula and clavicle had resumed their usual and relative places, the ribs on the right side were lowered, and those on the left elevated and she had totally lost the disagreeable sensation of dyspnœa, palpitation of the heart and nausea, whilst her strength and activity as well as appetite, digestion and spirits were greatly improved; but still there remained a slight sinking over the right hip, and an equal protrusion over the left, which were removed in the course of another six weeks, this was the most difficult part of the cure, as anybody acquainted with anatomy and the action of the muscles will be able to understand; when the complaint completely, I hope for ever, disappeared. She was then sent into the country for three months, and returned to town perfectly healthy, only a little too stout in ~~her~~ own estimation in consequence of having

discontinued the exercises which were necessary to her cure; this, however, was soon removed by a short attendance in a class of my Hygeinic Exercises. She is since married.

Thus a complaint which had baffled the skill of the profession for six years, was entirely removed in the short space of five months, with a complete renovation of the constitution, by a proper exercise of the antagonist muscles *alone*. How much better would it have been, if this treatment had been resorted to when the deformity was first discovered, when a week or two would have set every thing to rights, instead of leaving such cases till the cure must become difficult, if not doubtful, even in the most skilful hands.

CASE SECOND.

Lady. . . . lay in of her second child some time in the year 1832. Shortly after fever supervened, and it was soon discovered that the spine had become slightly distorted. A recumbent posture was, as usual, recommended and adopted for eighteen months with little or no benefit as to the disease, it was intended to remove, but so great was the prostration of strength that she could not

stand or be seated for five minutes without feeling a disposition to faint. Can it be credited, that with this experience of the utter inutility of the treatment, and the baneful effects it had already produced, it should have been persevered in, with the useless addition only of tonics, the hip-bath, with spunging and friction along the muscles of the back, trusting to nature for the restoration of her health? Well indeed would it have been, if nature had been really left to the uncontrolled exertion of her own despised though invaluable, and unerring resources; then would the desire of exercise, one of the most imperative laws she has laid down for the development, sanity, and preservation of the animal functions, throughout the whole of the animated world, have been made the successful agent of her operations. Her ladyship was however condemned to six months longer inaction, at the end of which time, all attempts to alleviate her situation were abandoned, and she was left for six years a painful example of the distressing effects of the recumbent system, with its consequent injurious inactivity, debarred every interesting occupation, and shut out from the enjoyments of society, till time itself had become an almost insupportable burthen. In this state with an apparently ruined constitution and useless frame I

first had the honor of attending her ladyship in March 1841, and clearly explained to her, that fewer weeks than the years so miserably sacrificed would have perfectly restored her, had the proper means been used when the complaint was first discovered; but, as the case now stood, six months of daily attendance, with a strict observance of what I might find it expedient to advise *in its minutest details* would be necessary, at the same time that it was impossible perfectly to restore the spine, yet that it might be so far improved as to render any little deviation from its proper form imperceptible, to the most critical observer when she was dressed.

At the expiration of four months, so great was the improvement, that her ladyships, professional attendant asked me, in her presence, if I did not think her sufficiently recovered, to bear a journey into the country, for the benefit of air and moderate exercise. This I did not think at that time, adviseable, and she instantly and eagerly requested me to continue in attendance, till I could confidently assure her, that her strength was established beyond the fear of a relapse into a condition, she remembered with so much horror, which I was able to do, at the end of three months. And all this was effected by a judicious exhibition of

exercise and diet alone, without friction, or any other assistant whatever. I have frequently waited upon her ladyship since, at her own desire, and have always found her in as good health, as she had been previous to her confinement, nor should I, had I not previously known it, have supposed, that there had ever been a curvature of the spine.

Thus was a complaint, which in the first instance ought to have been removed in a few weeks; after above nine years of suffering and accumulated difficulties induced by bad treatment; radically cured in the comparatively short space of seven months.

CASE THIRD.

In this case a lady, of delicate health from her birth, was in her fifteenth year attacked by fever, under which she suffered for five weeks, when a curvature of the spine was discovered between the shoulders: for the relief of which she was taken by her mother to one of the establishments in Paris, where she most anxiously attended her for fifteen months, at an expence of upwards £500. the curvature having rather increased than otherwise. What treatment was pursued, or what she

suffered, it is not necessary here to state, till by her own desire she was brought home, from the melancholy wish, that her death should take place in the midst of her own family; which, when I first saw her it was evident, under medical attendance only, could not have been far distant; exhaustion, with all its dreadful consequences, had proceeded to so great an extent. I was told, indeed, that she had not, for the last twelve months, attempted to stand or sit upright without a tendency to, or sometimes having actually fainted. This is to me, amongst many others, a convincing proof, that whilst there is life, if there be no organic disease, exercise, with a strict attention to diet, is the only treatment, from which relief can be expected. The director of which exercises should also have the management of the diet, than which perhaps nothing can be more difficult to arrange with effect, for it is almost impossible to contend with the too often and thoughtlessly received opinion, that strength is to be promoted more by a frequent and abundant, than by a careful and judicious administration of food, or to make the anxious attendants upon invalids understand, that one morsel more than sufficient to afford the proper aliment to the blood, is injurious in proportion to its quantity, by laying too great an onus upon

the organs of digestion, and loading them with matter, which, as it cannot be digested, must be carried off, not only without having effected any useful purpose, but having fearfully impaired, instead of assisted, their powers; particularly if the patient be in a weak condition. But little food indeed ought to be taken during the early stages of this treatment, as the exercises themselves produce a powerful and healthy excitement, ill supplied by the culinary stimulants, the blisters, friction, embrocation or medicine, considered necessary to support the sinking constitution during the recumbent and therefore inactive mode of treatment.

In the first place I directed, and saw put into execution a moderate and gradually increasing exercise of the upper and lower extremities, which cannot be called into action without exciting the principal muscles of the trunk; and these appear to have a mechanical, as well as physical influence upon the contents of the abdomen and organs of transpiration; they soon began to develop themselves, and certainly though slowly to acquire firmness, till at the expiration of ten weeks, she was able to sit upright for several hours at a time without any kind of artificial support and walk five hundred yards once a day without fatigue; the organs of digestion became capable of answering the

demands made upon them for a greater supply of nutriment; the blood began to circulate more vigorously; the glands and absorbing vessels to perform their proper functions, and the secretions to be carried on in their due proportions, and now not a week passes, without a rapid improvement and a perceptible decrease of the spinal deformity. From these circumstances, and my experience in former cases, I cannot entertain a doubt, that in three months at most, it will entirely disappear, and that she will be stronger and in better health, than she has enjoyed at any former period of her life.*

CASE FOURTH.

A young girl, of the age of sixteen was brought to me in the beginning of 1843, by her father, who was engaged in the sale of pictures; she was originally of a weak constitution, and not being equal to much exertion, she had imbibed a passion for copying the pictures which passed through her father's hands, to indulge which, as she was not permitted to have a proper easel in the show room, from which she was under the necessity of hurrying upon the introduction of every visitor, she

* Since this was written she has perfectly recovered, and with respect to health and strength, fully verified my prediction.

was obliged to support a heavy board upon her left arm, by resting her elbow in the hollow above the hip, and throwing the weight of the body principally upon the left leg. The consequences of standing in such a position for several consecutive hours each day were a declination of the body towards the left, and a depression of the ribs on that side, and a forcing upwards of the hip by straightening and stiffening the leg, and the action of the incumbent weight resting upon that point alone, a rising forward of the right shoulder, with a twisting of the back bone, in consequence of the arm being passed across the body to use the brush upon a board necessarily placed so much to the left; and a separating of the ribs, correspondent to the depression on the other side, hence a double curvature of the spine. And here, to a casual observer, is the most extraordinary part of the case, that a defect of such extent should have remained undiscovered for several years; but the recurrence of similar neglect has come too frequently under my observation to create surprise. It may be asked, as it had escaped the notice of those immediately about the person of the child, how I can pretend to fix a term to its existence. Of that, from the evidence of the curvature itself, long experience has taught me to form a tolerably correct

judgment. The lengthened progress of a deformity so palpable, one would think, to the most careless attendant, if, indeed, the child, as is too often the case, was not left entirely to herself, proves, amongst an hundred other instances, that I have not too strongly recommended periodical inspections of the person, by some one sufficiently competent, for it is evident that they cannot be made by the parties themselves, as turning round the head to look in a glass or the endeavour to pass the hand up and down the spine must produce a temporary derangement of the vertebræ. These inspections should be continued till the individuals have done growing, and a part of so much importance as the spinal column be confirmed in all its regions, particularly as they advance towards the age of twenty-one; because if the mischief obtains about that time it will probably be incurably established ere the remedy can be applied. The consequence of such inspection in the present case would have been the discovery of the deformity in a month or two, and as many weeks have sufficed for its removal.

I was much mortified, and a good deal puzzled, by not being able for several weeks to perceive any favorable alteration in the disposition of the vertebræ, and the more so as this was the first case of resistance

for so long a time : I found, however, that the indulgent parent could not find in his heart to deprive his daughter of her only enjoyment, and I was obliged to reason with the child herself before I could be sure that it would be given up during her continuance under my care ; in ten days after this the usual beneficial effects of the treatment began to manifest themselves, and in three months every vestige of deformity disappeared, and she returned to her favorite pursuit with renewed ardour, but to prosecute it more rationally, and in a less dangerous way, by using a proper easel, or sitting to her work, and never too long without rest, continuing, at the same time the exercises which I well knew would counteract the ill consequences of such a pursuit ; some modification of which, I have clearly shewn, should accompany the studies of the strong and well formed, as well as those of the weak and predisposed to distortion. She was three inches and a half taller before the end of the year, partly by the straightening of the double curvature, and partly by natural growth. Her general health also, and vigor of body and mind, more than kept pace with the improvement of person.

CASE FIFTH.

In the ninth year of her age, and first at school, the right shoulder of a child was observed to be the highest, and, though this irregularity continued to increase for four years, the medical attendant still flattered her parents with the hope that she would outgrow it, a hope that never was and never will be realised. They at last, however, began to lose their confidence in his skill and she was placed under the care of a dancing master, perfectly guiltless of any necessary information, as his practice fully proved. He put her through a course of what he called Calisthnic exercises, without having the least idea of their operation, and acting upon no principle, or still worse upon an erroneous one, he directed her to walk in the garden for half an hour every day with 14lb weight in her right hand, absurdly supposing that it would gradually pull the shoulder downwards. Let us see what an intelligent anatomist would anticipate from such treatment? Those muscles would be called into action on that side only, which enable the porter to raise his shoulders to meet and sustain the load which he carries, the body would decline towards the left in proportion

to the weight and the muscles of the loins on that side be strongly exerted to preserve the balance, the shoulder would rise higher and higher, and a double curvature of the spine be induced. And all this actually took place, for, at the end of six months, the point of the shoulder was nearer the ear by three inches, and the spine became dreadfully twisted and distorted, from which time neither he or the medical man had any thing further to propose ; every effort was abandoned, and the poor child was left, hopelessly, as it appeared to them, to grow more and more deformed under the helpless anxiety of her parents, till her father happening to see a work upon Spinal Deformity published by me twelve years ago, lost no time in seeking relief at my hands. Thus, in consequence of the disingenuousness of a medical man, and the gross ignorance of a dancing master, it was rendered necessary to employ five months and a half of close attendance before she became perfectly straight and well formed, which, if proper means had been adopted when the irregularity was first discovered, might have been effected in a less number of weeks. She became several inches taller from the same causes as in the last case, with an equal improvement in her health and mind.

It would be superfluous to describe any more cases, as they can be distinguished only by the character, extent, and situation of the deformity ; the time which may have elapsed since their commencement, and the age and habits of the patient, whilst the treatment though varying in practice, must always be the same in *principle*. And I beg of my readers to observe, that the province of the Physician or Surgeon has not been interfered with in any of the above cases. as it is evident, that neither the *knife** or medicine could have been employed with any beneficial effect. The principal cause of my uniform success perhaps has been, that I have never undertaken any case, where the deformity has been accompanied by inflammation or organic disease, and to prevent my inadvertently doing so, I have, upon every occasion, made the strictest enquiries, and most minute examination, where, if experience had not taught me, a very superficial knowledge would enable any one to discriminate between the cases which require professional aid, and such as are the more immediate objects of my mode of treatment. I have, therefore, (perfectly aware of my own inability,) recommended every such case to the care of the

* See Mr. Skey's *Essay upon Curvature of the Spine*.

profession, whence alone relief can be reasonably expected, not less indeed for my own sake than that of the patient; but they bear a very small proportion to those in which the various causes I have endeavoured to explain in the foregoing pages, have superinduced deformity without organic disease. Disease, in fact, is much more frequently the consequence, than the cause of Spinal Deformity.

I shall conclude with a few remarks, disavowing most unequivocally, any intention of disrespect to the profession, but from the cases cited, and from hundreds of others, which have been intrusted to my care, I am, I think, fully justified in assuming, that they at least were beyond the power of surgery or medicine to alleviate, for not one in fifty of them was brought to me till the patients had for months, and in a great many instances, years, been the subject of professional experiment, always injurious, but too often to a fearful extent, because founded upon no principle, and in direct opposition to the known laws of nature. It is, therefore, with some pride and great pleasure, that I have witnessed on so many occasions, the satisfaction as well as astonishment of the patients and their friends, at the rapidly progressive improvement observ-

able, even from day to day, and the ease and enjoyment which each successive week has produced till the establishment of the health and the restoration of the form have become complete, and I have reason to believe permanent; for not one patient has come back to me with a return of the complaint, though many have done me the honor to call upon me at various periods after the discontinuance of the exercises, in a happy state both of health and form. The satisfaction above alluded to has been damped only by the unavailing regret, that so much time and expense should have been uselessly, nay worse than uselessly thrown away, and so much unnecessary suffering been endured by the unfortunate object.

Were a professional man consulted as to the best means of attaining a symmetrical and healthy person. he would most likely, not without some feeling of wounded dignity, refer the enquirer to the dancing or posture-master, under the impression that it is the duty of *his* department to grapple with, not prevent, disease, and that the formation of the person is far beneath his attention, till some deviation from its due proportion has forced it upon his observation, as the cause of some too-plainly indicated disease; besides the

hour a day necessary to superintend any efficient course of exercise, which ought not to be trusted to any less intelligent person, he would consider too great a sacrifice of his valuable and costly time; the attendance too, must, in bad cases, during the earlier stages of the treatment, till the patient has acquired a certain degree of strength, be at her own house, and afterwards at that of the practitioner, as most of the instruments are fixtures, and the remainder too bulky to be carried about. (See Preface.)

It appears then, that the greater proportion of cases of spinal deformity are without the pale of professional consideration or attendance (1), any person therefore who has acquired a sufficient knowledge of the physiology of the human frame, and a thorough acquaintance with the effect of every exercise, with a command of time sufficient to bestow his undivided attention upon the subject, ought to be supported by the profession (see

(1) The reader will not think these remarks irrelevant, when I state that, I called some time since upon a number of eminent professional gentlemen, who seemed pleased with my suggestions, to whom I offered the opportunity of sending a patient to me free of expence, and attending to the progress of the treatment, and the application of the various instruments I have invented to effect my purpose, one only of whom came to my house and asked a few useless questions and took no notice of the instruments; *it is now too late.*

page) as well as the public in general, if by supplying the deficiency, and undertaking the superintendence of such cases, he shall be able to succeed in so beneficial an object, and one so much required by I fear too many of our unfortunate fellow creatures, the cure of Spinal Deformity.

In conclusion, the Author trusts that with every respect due to the profession, and those most interested in the welfare of young people, he has clearly shewn in satisfaction of the statements he declared in the Preface he was in a condition to prove, that Spinal Deformity, occasioned by external agency, would never have existed but from misapplication of means, neglect, or ignorance, and that no practical system had been proposed to guard against it, or any physical principle established for its removal, and that it can be easily and permanently removed by the simplest means, scientifically selected, and judiciously applied, in accordance with the *known laws of nature*.* If he be so fortunate as to rescue but even a few of the

* Having read Mr. Staflford's Essays on the "Treatment of Lateral Curvature by Gravitation and Lateral Exercise," which I did not till after I had completed the present work, I see no reason to alter any one of the statements which I have made, as he has laid down no principle, but simply detailed effects.

young and beautiful from the dangers he has pointed out, if not counteracted, as the inevitable accompaniments of an education dedicated too exclusively to the attainment of accomplishments more practical than intellectual, requiring less of mind than corporeal dexterity, or be the means of restoring even a small proportion of those who may have become martyrs to its operations, it will be the highest gratification to himself that these pages have not been written in vain.

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